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STUDIES IN BASAL METABOLISM*

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MINNEAPOLIS

Metabolism is the basis of life and of all its phenomena. Like Tennyson's "Brook," it goes on forever. Species are cast in various molds, generations appear and disappear, youth is followed by maturity and age, yet through it all, running along on predetermined lines, goes metabolism.

Protoplasm is not mere matter. The cell is the origin of energy, the seat of chemical exchange, of growth, of function and of life. The digestion and assimilation of nutriment, reproduction, growth, inflammation, degeneration, regeneration, exercise of function, motion and emotion are all matters of chemistry. Species, genus and period of existence are incidents determined by heredity, while size, weight and even personal appearance are matters of metabolism. Where life is, metabolism is; and regulating it are the endocrine glands, the glands of internal secretion.

By the aid of calorimetry we learn that in health the regulating factors are adjusted or balanced to yield metabolic rates best adapted to energy requirements and to bodily needs. Thus, during rest and sleep the energy requirement and output are low and the rate is decreased; but as more energy is demanded, the rate of metabolism increases in proportion to the need. The two extraneous factors most commonly and markedly affecting metabolic rates are exercise and food. It is necessary, therefore, to adopt for comparative purposes conditions under which these factors are reduced to a minimum. The resulting rate, designated the "basal metabolic rate," represents metabolism when the body is at complete rest and when the digestive processes are at their normal daily minimum. So perfect is the adjustment in health that under the conditions indicated the basal metabolic rate is found to bear a constant relation to the surface area, the rate thereby becoming mathematically a function of the body surface, while in many diseases metabolism is fundamentally deranged, the basal metabolic rate ranging far above or below normal. In the following paragraphs, discussion will center on some of the more important factors affecting the basal metabolic rate.

TECHNIC EMPLOYED IN DETERMINING THE BASAL METABOLIC RATE

The development of indirect calorimetry is significantly affecting medical practice. The determination of the basal metabolic rate is at present a practical procedure which can be carried out in any well equipped hospital or clinic, at the bedside or in the laboratory. The newer methods enable the physician to gather fundamental information concerning the status of the patient's metabolism formerly available only through elaborate studies carried out in special institutions equipped with costly calorimeters and manned by a highly trained personnel.

In determining the basal metabolic rate, the gasometer method is employed. In our work Tissot's [1] spirometer, with certain modifications introduced by Boothby [2] and Sandiford,[3] has been employed in the collection of air, and in its analysis Haldane's apparatus.

Preparation of the Patient.—The rate is determined after a fourteen hours' fast, that is, in the morning before breakfast, no food having been taken since the meal of the previous evening. Hospital patients are confined to bed and brought to the laboratory on a litter, and after a fifteen to thirty minutes' wait, collection of air is begun. Patients from outside, brought in automobiles or street cars, are subjected by routine to from one-half to one hour's rest, preferably lying down, before the collection of air is instituted. The patients are instructed to breathe as naturally as possible and to avoid forced expiration in an effort to overcome the slight resistance of the apparatus. Patients who are uncomfortable tend to deep and irregular breathing. Obese persons and those with marked thyroid enlargement are accorded special attention as to posture, the head being elevated and the patient placed in as comfortable a position as possible. Control collections are necessary when uncertainty exists as to the comfort of the patient during the period of collection. In nervous and neurasthenic persons, repetition on a subsequent day is also necessary, since not infrequently high rates are encountered in the initial readings.

BASAL METABOLIC RATE IN NORMAL PERSONS

Any method to be of value must yield under proper control consistent normal values in normal persons, and

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* Because of lack of space, this article is abbreviated in THE JOURNAL. The complete article appears in the Transactions of the Section and in the author's reprints.

* Read before the Section on Pharmacology and Therapeutics at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. Tissot, J.: Nouvelle méthode de mésure et d'inscription du débit et des mouvements respiratoires de l'homme et des animaux, J. de phys. et de path. gén. 6:688, 1904.

2. In Boothby's modification of Tissot's technic, a face mask replaces the nasal tubes, Douglas' mica valves replace the electrically controlled valves used by Tissot, and a steel tape replaces the automatic measuring device of the original apparatus.

3. Boothby, W. M.: The Clinical Value of Metabolic Studies of Thyroid Cases, Boston M. & S. J. 175:564-566 (Oct. 19) 1916. Boothby, W. M., and Sandiford, Irene: Technic of Basal Metabolic Rate Determinations, Philadelphia, W. B. Saunders, 1920.

deviations from normal only when variations actually exist. The basal metabolic rate itself is subject to many and varied influences, while the technic and calculations involved contribute additional possible sources of error. From an experience extending over fourteen months and involving approximately 750 determinations on 350 persons, we believe that the method yields results which vary only within narrow limits, which are reliable and consistent, and which are of practical value in following the clinical course of the case.

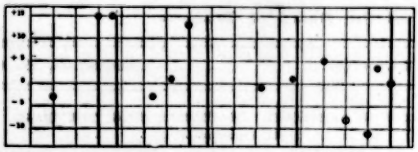

Fig. 1.—Basal metabolic rates in relation to menstruation. The columns represent the menstrual periods.

As controls, a group was studied consisting of twenty-eight healthy students and nurses, and persons suffering from minor ailments entirely unassociated with endocrine disturbances (Table 1).

In order further to control the accuracy of the method and the constancy of the basal metabolic rate, a group of normal persons was subjected to repeated observations. In twenty-five determinations on nine subjects, the greatest variation found in the rate in an individual case was 10.5 per cent., the average variation being approximately 5 per cent. (Table 2).

TABLE 1.—BASAL METABOLIC RATE IN NORMAL PERSONS

A: Normal Persons			B: Patients with Minor Ailments Unassociated with Endocrine Disturbances		
Name	Sex*	Basal metabolic Rate	Name	Sex*	Basal metabolic Rate
M. B.	♀	−6	L. B.	♀	+9
G. H. B.	♂	−6	S. C.	♀	+6
D. D.	♀	+7.8	M. G.	♀	+6
C. W.	♂	−7	M. G.2.	♀	+5
L. E.	♂	−4	J.	♂	+5
M. M.	♀	+3.1	M. T.	♀	−2
J. H.	♀	+4	H.	♀	+6
W. J. B.	♀	+1	A. P.	♀	+4
E. K.	♀	+2.5	M. A.	♀	+7
L. M.	♀	+1.4	L. K.	♂	+2
B. C.	♀	+2.5	B.	♀	0
E. B.	♀	−2.4	E. S.	♂	+1
R. R.	♀	+3.4	L. R.	♀	−4
F. E.	♀	−1.8	E. L.	♀	−4

* In this column ♂ indicates male, and ♀ female.

TABLE 2.—REPEATED DETERMINATIONS ON NORMAL PERSONS

No.	Name	Sex	Between the Dates		Metabolic Rates			Greatest Variation Between Readings
1	W. J. B.	♂	1/ 3	1/22	+1	−1.2	+1.3	2.8
2	R. K.	♀	11/27	1/10	+2.5	+2.9	+3.2	0.7
3	L. M.	♀	11/15	11/26	+1.4	+0.5	−2.2	3.6
4	B. C.	♀	12/10	2/ 3	+2.5	+5	+2.3	2.7
5	E. B.	♀	12/11	3/10	−2.4	−3.4	−0.5	2.9
6	O. G.	♀	3/ 2	3/11	+2	+1.7	....	0.3
7	D. D.	♀	11/21	3/11	+7.8	−1	+9.5	10.5
8	Mcl.	♀	10/ 4	1/16	+3.1	−2.7	....	5.8
9	H. D.	♀	10/11	1/20	−2.9	−7.7	+1.5	9.2

Effect of Previous Exercise.—As a matter of practical importance, it is necessary to ascertain whether or not moderate exercise in the morning just prior to determination affects the rate, since many patients are sent in from the outside for determination of the basal metabolic rate. Reliable results can be obtained on outpatients after moderate exercise, provided they are subjected to from one-half to one hour's rest; but without this rest the results are unreliable. In order to ascertain the extent to which exercise affects basal metabolism, the rate of several subjects was determined immediately subsequent to moderate exercise, that is, a short walk of 300 yards and the climbing of two flights of stairs, the amount of exercise to which many patients are frequently subjected. The changes encountered emphasize the need of careful control in this connection (Table 3).

The Effect of Menstruation.—Menstruation, a factor usually neglected, is perhaps of some practical importance. So far as we are aware, it has never been allotted any consideration in the studies of metabolism. But it does affect the basal metabolic rate of women at times in health and in disease. To determine the extent of its influence a special investigation has been carried out by one of us (Ford), the details of which will appear shortly in a separate communication. The effect of menstruation can be seen in the chart which represents the findings in a normal student (Fig. 1).

A rather constant rise occurs during menstruation or in the premenstrual period, the rise being followed by a postmenstrual fall. Ten cases have been studied.

TABLE 3.—EFFECTS OF EXERCISE ON BASAL METABOLIC RATE

Name	Sex	Previous to Exercise	After Exercise (Immediately)
H. B.	♀	+5	+43
D. D.	♀	−9	+43
H. P.	♀	+1.8	+38
		+1.5	+67
M. McL.	♀	−2	+32

Of these, two show practically constant rises, and six constant rises, varying from 4 per cent. to 14 per cent., the average being 10 per cent., while in two a drop in rate was encountered. Values outside normal limits, ± 10, are infrequent.

BASAL METABOLISM IN DISEASE

In this connection, detailed consideration will be allotted basal metabolism in certain diseases of the endocrine system. In our studies hyperthyroidism, febrile diseases and leukemia have exhibited the highest rates, while hypothyroidism, polyglandular deficiencies and afebrile conditions resulting from inanition and marked asthenia have yielded the lowest rates. Starvation and prolonged rest in bed tend to result in low rates.

DISEASES OF THE THYROID

The thyroid is the principal or chief "regulator of metabolism." Whereas other endocrine glands may be concerned with specific features of metabolism, such as growth, carbohydrate metabolism or water balance, the thyroid affects primarily the metabolic rate, and secondarily perhaps other features.

Friedrich Müller [6] and Magnus-Levy [7] were the first to direct our attention to the metabolic changes attending diseases of the thyroid.

6. Müller, Friedrich: Beiträge zur Kenntnis der Basedow'schen Krankheit, Deutsch. Arch. f. klin. Med. 51: 335-412, 1892-1893.

7. Magnus-Levy, A.: Ueber den respiratorischen Gaswechsel unter dem Einfluss der Thyreoidea sowie unter verschiedenen pathologischen Zuständen, Berl. klin. Wchnschr. 32: 650-652, 1895. The Physiology of Metabolism, in von Noorden, K. H.: Metabolism and Practical Medicine, Chicago, Keener & Co., 1, 1907.

In the study of various diseases of the thyroid we have found Plummer's [8] classification of the greatest assistance. These groups have been recognized:

1. Hypothyroidism; (*a*) cretinism, (*b*) myxedema.
2. Hyperthyroidism; (*a*) exophthalmic goiter, (*b*) thyrotoxic adenoma.
3. Nontoxic enlargements of the thyroid; (*a*) adenoma, nontoxic; (*b*) adolescent goiter; (*c*) colloid goiter.

HYPOTHYROIDISM

A group comprising thirteen cases of cretinism and myxedema was investigated from the standpoint of basal metabolism. An unusual opportunity for the study of cretinism [9] and juvenile myxedema was afforded through the presence of eight such patients in the State Institution for Feeble-Minded.[10] Through the courtesy of the superintendent, these patients were brought to the University Hospital, where they were subjected to an intensive study which included routine physical examination, Wassermann tests, urinalyses, studies of blood chemistry and of basal metabolic rates, roentgenograms, electrocardiograms, anthropological measurements, dental examinations, and physiologic investigations involving determinations of the auditory reaction time and Binet and performance tests. The patients' ages varied from 15 to 31 years. In all but two cases the objective and subjective manifestations were characteristic (Fig. 2 and Table 4). The thyroid could not be palpated in six, while in two (F. D. and N. D., sisters) cystlike tumors about 2 by 3 cm. and of fibrous consistency were felt in the region of the isthmus. Of the two remaining cretins, one (W. R., Fig. 3) was typical in every respect, while the other, though mild and atypical clinically, represented the lowest metabolic rate encoutered in the entire series.

In the cretins, the metabolic rate varied from —7 to —25. No constant or absolute parallelism between the clinical manifestation and the metabolic rate [11] could be established, although, generally speaking, some agreement existed. The striking exception is seen in Case 9, which represents the lowest rate, although the clinical manifestations were mild. Whether or not environment plays a rôle clinically must be considered, since the patient, the child of wealthy parents, had been surrounded since birth with all the comforts and luxuries of life (Table 4).

HYPERTHYROIDISM

Under hyperthyroidism are included exophthalmic goiter and adenoma of the thyroid with hyperthyroidism (thyrotoxic adenoma).

Exophthalmic Goiter (Parry's, Graves', or Basedow's disease).—Although the first description of this disease appeared in 1827, it was not until 1895 that Magnus-Levy called attention to the increased metabolic rate. In this country special attention has been given the subject by Means and Aub,[12] Du Bois,[13] Plummer,[8] Boothby and Sandiford,[3] and McCaskey.[14]

In our small series comprising thirteen cases, which were all typical clinically, the basal metabolic rate ranged from + 20 to + 82, the rates being approximately proportionate to the clinical evidences of thyroid intoxication. Two patients of the series died. The patient with the highest rate, + 82, died within a month after single ligation. The second patient, rate + 56, did not come to operation, but died of cerebral apoplexy. The rates relative to our cases can be seen in Table 5, and the results of treatment in Table 6.

Fig. 2.—Cretinism and juvenile myxedema: From left to right, back row, A. H., aged 24; I. A., aged 15; front row, C. F., aged 22; F. D., aged 15; N. D., aged 25; W. A., aged 31.

One case was of particular interest, especially in relation to the recent publication of Means and Aub, in which they advocate the use of the roentgen ray in the treatment of exophthalmic goiter. The patient, aged 28, presented a small adenoma in association with a diffuse parenchymatous hypertrophy. More than a year subsequent to lobectomy, the basal metabolic rate was still abnormally high and did not respond to six weeks' rest in bed and courses of sodium cacodylate. A rapid return of the rate to normal, together with marked clinical improvement, followed repeated roent-

8. Plummer, H. S.: The Clinical and Pathologic Relationships of Hyperplastic and Nonhyperplastic Goiter, J. A. M. A. **61**: 650-651 (Aug. 30) 1913; The Clinical and Pathologic Relationship of Simple and Exophthalmic Goiter, Am. J. M. Sc. **146**: 790-796, 1913; The Function of the Thyroid, Normal and Abnormal, Tr. Assn. Am. Phys. **31**: 128-133, 1916.

9. We are indebted to Dr. E. C. Kendall for the thyroxin used in these studies.

10. The details of these investigations will be the subject of a separate report. The question might be raised as to whether or not we are correct in accepting the chronological age as the basis of calculation in determining the basal metabolic rate in cretins of advanced age. Thus in W. A., Case 7, the rate is —7. Were we to accept the mental or physical development (2 to 5 years) as the basis of calculation, the rate would be lower and more in keeping with the clinical findings.

11. An attempt to correlate basal metabolism and mentality, utilizing for this purpose standard psychologic measurements, would probably reveal most interesting relationships

12. Means, J. H., and Aub, J. C.: A Study of Exophthalmic Goiter from the Point of View of the Basal Metabolism, with Remarks Concerning the Effect of Various Forms of Treatment, J. A. M. A. **69**: 33-37 (July 7) 1917; The Basal Metabolism in Exophthalmic Goiter, Arch. Int. Med. **24**: 645-677 (Dec.) 1919. Means, J. H.; Aub, J. C., and Du Bois, E. F.: Clinical Calorimetry, Twentieth Paper, The Effect of Caffein on the Heat Production, Arch. Int. Med. **29**: 832-839 (May) 1917.

13. Du Bois, E. F.: Clinical Calorimetry, Fourteenth Paper, Metabolism in Exophthalmic Goiter, Arch. Int. Med. **17**: 915-964 (June) 1916.

14. McCaskey, G. W.: The Basal Metabolism and Hyperglycemic Tests of Hyperthyroidism, with Special Reference to Mild and Latent Cases, J. A. M. A. **73**: 243-247 (July 26) 1919; Basal Metabolism Determinations in General Internal Diagnosis: Clinical Application, with Illustrative Cases, ibid. **74**: 927-931 (April 3) 1920.

gen-ray treatments[15] (Fig. 4). This case is not presented as an argument for roentgen-ray as against surgical treatment, but it does indicate the desirability of utilizing the roentgen ray when surgical treatment has failed or fallen short of complete restoration to normal.

Adenoma of the Thyroid with Hyperthyroidism (thyrotoxic adenoma).—In analyzing our hyperthyroid material we have followed Plummer, who has clearly separated from true exophthalmic goiter accompanied by hyperplasia and hypertrophy of the thyroid a group of cases of adenoma with thyrotoxicosis. Plummer's contention as to the thyrotoxic character of the symptoms encountered in this disease, namely, nervousness, tremor, tachycardia and loss of weight and strength, finds confirmation in the increased metabolic rates encountered in the investigations carried on in the Mayo Clinic by Plummer,[8] Boothby[9] and Sandiford,[16] and in the results of our studies here reported.[17]

In our series are eleven cases of thyrotoxic adenoma, three of which exhibited slight but definite exophthalmos. The data in relation to our series appear in Table 7, and the results of treatment in Table 8.

TABLE 4.—CRETINISM AND JUVENILE MYXEDEMA

No.	Patient	Age	Sex	Height, Cm.	Weight, Kg.	Mental Age, Mo.*	Reaction Time, Seconds*	Basal metabolic Rate	Grade†	Treatment	Result
1	H. L., 18410	31	♀	119.3	37	22	Patient too stupid	−20	4	Thyroxin	Markedly improved
2	I. A., 18408	15	♀	136	43	44	0.399	−23	3	Thyroxin	
3	C. F., 18414	22	♀	130	39	54	.....	−14	3	Thyroxin	
4	F. D., 18411	15	♀	99	28.8	32	0.199	−13	2	Thyroxin	
5	N. D., 18413	25	♀	125	44.5	37	0.467	−22	4	Thyroxin	
6	A. H., 18412	24	♀	144	55.2	46	0.289	−12	3	Thyroxin	
7	W. A., 18409	31	♂	115	25.8	55	0.525	− 7	4	Thyroxin	
8	W. B.,	7	♂	90	45	66	.....	−21	2	Thyroxin	Markedly improved
9	K. Mc. P. C.	6	♀	112	19.9	46	.....	−25	1-2	Thyroxin	Markedly improved
10	M. B., 18632	27	♀	122	50	42	.....	−12	3	Thyroxin	
					ADULT MYXEDEMA						
	M. P., 18424 18489	32	♀	157.5	60.1	Mentally fair	Mental reaction slow	−32	2-3	Thyroxin	Myxedema disappeared
	P.	30	♀	164	70.4	Childish mentally	.....	−21.5	1	Thyroxin	
	P. 18609	37	♂	165	70	12½ years	.....	−26	2	Thyroxin	Improved

* Tests made in the department of psychology.
† On a basis of 1 to 4.

TABLE 5.—CONDITIONS IN EXOPHTHALMIC GOITER BEFORE TREATMENT

No.	Patient	Age	Sex	Thyroid	Pulse	Blood Pressure Systolic	Blood Pressure Diastolic	Left Ventricular Hypertrophy	Tremor	Eye Signs	Loss of Weight	Nervousness	Grade	Basal Metabolic Rate
1	R. W., 18082	21	♀	Large diffuse, vascular	90	124	76	+	+	+	0	.....	2	+20
2	G. W., 16626	15	♀	Large diffuse, vascular	100-120	160	65	Dilatation +	++	+	+	++	4	+50
3	V. A., 16890 15542	22	♀	Large diffuse, vascular	120	122	86	.. +	+	+	10 pounds	+	3	+45
4	M. T., 17563	35	♀	Large diffuse, vascular	100	128	80	+	+	+	Very slight	+	3	+32
5	P. O., 17396	30	♀	Large diffuse, vascular	120	124	66	+	Slight	Slight	Slight	+	2	+74
6	C. E., 17425	47	♀	Large diffuse, vascular	90	120	66	..	+	Slight	..	+	2	+25
7	A. E., 17009	26	♀	Large diffuse, vascular	120	116	48	+	+	+	Very slight	++	4	+32
8	E. P., 9563 18002	28	♀	Small, adenomatous	100	140	80	+	+	Slight	+	+	3	+30
9	E. J. O., 17002 17270	25	♀	Large diffuse, vascular	100-110	112	72	Slight	Slight	Slight	++	+	3	+45
10	M. A., P. C.	37	♀	Large diffuse, vascular	110	...	..	+	++	+	Slight	+	3	+45
11	M. Mc., P. C.	57	♂	Large diffuse, vascular	85-100	185	105	+	Slight	++	Slight	+	3	+54
12	E. P. Y., 18763	21	♀	Moderately enlarged, vascular	110	140	60	+	+	+	+	++	3	+53
13	A. L., 18702	15	♂	Large diffuse, vascular	110	142	64	Dilatation +	+	++	+	+	2	+19

According to Plummer, in thyrotoxic adenoma the enlargement of the thyroid appears earlier in life, the struma persists, as a rule, for a much longer period before the appearance of thyrotoxic manifestations; exophthalmos develops much less frequently and is less marked, and hypertension is of common occurrence. Some cases of this group closely resemble exophthalmic goiter, while in others the cardiovascular phenomena predominate, hypertension playing a great rôle early in the course of the disease, and myocardial degeneration in its later stages.

15. Our data are too meager to permit an expression of opinion concerning the relative merits of the surgical and the roentgen-ray treatment. The subject is being investigated in our clinic.

NONTOXIC ENLARGEMENTS OF THE THYROID

Nontoxic Adenoma.—Adenoma may persist for many years without concomitant toxic manifestations. Plummer states that adenomas appear as a rule about the twenty-second year, but that the toxic manifestations do not usually appear until the thirty-sixth year. Certainly adenomas may exist for many years with the

16. Sandiford, Irene: The Basal Metabolic Rate in Exophthalmic Goiter (1917 Cases), with a Brief Description of the Technic Used at the Mayo Clinic, Endocrinology 4:71-87, 1920; The Effect of the Subcutaneous Injection of Adrenalin Chlorid on the Heat Production, Blood Pressure, and Pulse Rate in Man, Am. J. Physiol. 51:407-422, 1920.

17. We wish to express our gratitude to Drs. Plummer and Boothby and to Miss Sandiford for assistance in the installation of our metabolic laboratory, and for many helpful suggestions in regard to technic.

entire absence of general symptoms. Our study included a series of twenty-two cases; practically all the rates fell within normal limits.

Adolescent Goiter.—Fourteen girls (a group of university students) presenting adolescent goiter were studied for the basal metabolic rate. With two exceptions the rates fell within normal limits. In neither of the cases with high rates were there either symptoms or signs of thyroid intoxication.

BASAL METABOLISM IN DISEASES OF THE PITUITARY GLAND

The pituitary gland is concerned primarily with phenomena of growth and sex development, and perhaps also with water balance. The relation of the pituitary to the basal metabolic rate and to the function of the thyroid in health and disease has not yet been fully determined.

Hyperactivity of the anterior lobe occurring in youth results in gigantism, and in adults in acromegaly, while hypo-activity results in infantilism, and when combined with deficiency of anterior lobe hormone, in Fröhlich's syndrome or dystrophia adiposogenitalis. Hypo-activity of the posterior lobe and pars intermedia gives rise to diabetes insipidus.

A group of seven pituitary cases has been studied, including two cases of Fröhlich's syndrome and five of primary diabetes insipidus. The basal metabolism in these cases and the effect on it of pituitary extract is shown in Table 9.

Other instances of pituitary disorders (Fröhlich's syndrome and acromegaly) have been encountered, showing marked disturbances of the metabolic rate. These will be reported later.

From the data here represented it is evident that no profound or lasting effect on basal metabolism has resulted from the administration of desiccated powder of the anterior lobe by mouth, or from the subcutaneous use of the extract of the posterior lobe and pars intermedia. The addition of thyroxin to anterior lobe extract resulted in two cases of Fröhlich's disease in a marked increase in metabolic rate which was somewhat in excess of that induced by similar doses in normal persons.

BASAL METABOLISM IN DIABETES MELLITUS [18]

The fall of metabolic rate accompanying the period of fasting in the treatment of diabetes mellitus is striking. As a rule, during starvation bradycardia develops, and concomitantly a fall in metabolism, decreases of from 10 to 20 per cent. being commonly encountered. The variations in rate in a series of patients on an ordinary diet, during the period of fasting, and subsequently on the highest caloric or maintenance diet, are shown in Table 10.

THE INFLUENCE OF DRUGS ON BASAL METABOLISM

Little is known concerning the influence of drugs on metabolism. Organotherapy is the only field of treatment in which any attempt at systematic investigation has been undertaken as yet.

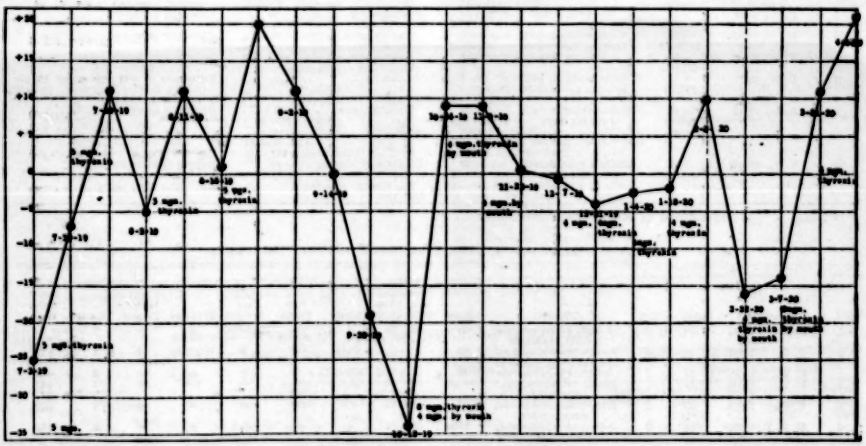

Fig. 3.—Effect of thyroxin in cretinism.

The effect of subcutaneous injections of epinephrin chlorid has been studied by Sandiford. She has demonstrated "an increase of the rate in cellular combustion varying between a calorific increase of from 4 to 48 per cent. This increase is usually accompanied by an increase in the ventilation rate, respiration rate, number of heart beats each minute, volume of each beat, greater utilizing of blood-carrying power, and peripheral dilatation with an increased systolic and decreased diastolic blood pressure. No relation was found between the intensity of the epinephrin reaction and the degree of hyperthyroidism and hypothyroidism." The increased rates encountered she believes to be in harmony with Cannon's "emergency theory," and with Lusk's findings of an increased metabolic rate in carbohydrate plethora.

18. For detailed studies of basal metabolism in diabetes mellitus, the reader is referred to: Allen, F. M., and Du Bois, E. F.: Clinical Calorimetry, Seventeenth Paper, Metabolism and Treatment in Diabetes, Arch. Int. Med. 17: 1010-1059 (June) 1916. Benedict, F. G., and Joslin, E. P.: Metabolism in Diabetes Mellitus, Pub. 136, Carnegie Inst. of Washington, 1910; Pub. 176, A Study of Metabolism in Severe Diabetes, 1912.

In relation to the influence of other drugs on basal metabolism no information is available except for caffein, atropin, strychnin, morphin and camphor (Edsall and Means,[19] Higgins and Means,[20] Means and Aub,[12] and Du Bois[13]). Means and Aub demonstrated an increase in basal metabolism of from 7 to 23 per cent., resulting from 10 grains of caffein. In therapeutic doses, atropin and camphor have been shown to increase metabolism slightly, morphin to depress it somewhat, while strychnin exerts no appreciable effect.

Potassium Iodid.—The effect of moderate doses of potassium iodid was investigated in seven subjects. In four cases with normal thyroids no increase in metabolism resulted, although in two of these the drug was pushed to the point of iodism (rash and coryza). Three subjects presented small adenomas, and in each, marked increase in basal metabolism resulted, 20 per cent. or more. A most striking result is shown in Figure 5, and serves to emphasize the danger so frequently pointed out by Kocher of administering potassium iodid to a patient suffering from adenoma of the thyroid.

Sodium Cacodylate.—In a small series of cases with high rates, sodium cacodylate was administered subcutaneously in courses of 50 mg. daily for six days. The result was disappointing. In one of the milder cases of exophthalmic goiter with a rate of + 31, rest and sodium cacodylate reduced the rate to normal; but in several instances the rate persisted at the same high level, or actually mounted to higher levels. Since Means and Aub have shown a similar drop for rest alone, or for rest with sedatives (barbital, paraldehyd, bromids and quinin), it is more than probable that the rest, rather than the cacodylate, was responsible for the results obtained.

Cyanids.—On the basis of Hunt's[21] work, in which he showed a markedly increased tolerance for acetonitril in mice undergoing thyroid feeding, sodium cyanid, 3 mg., was administered two or three times daily to patients with exophthalmic goiter and toxic adenoma.

TABLE 6.—RESULT OF TREATMENT ON BASAL METABOLIC RATE IN EXOPHTHALMIC GOITER

No.	Patient	Initial Rate; Date	Medical Treatment	Rate Following Medical Treatment; Date	Surgical Treatment; Date	Rate Following Surgical Treatment; Date	Comment
1	M. A., P. C.	+45 1/20/19	Cacodylate; four weeks in bed	+44 2/18/20	Lobectomy 2/20/20	+2.3 4/30/20	Marked improvement
2	F. P., 18062	+25 12/12/19	Roentgen ray	+ 7 4/10/20	.....	+43 10/31/19	Lobectomy 14 months previously (Fig. 4)
3	A. E., 17069	+82 8/9/19	Sodium cacodylate; restricted diet; two weeks in bed	+64 8/24/19	Ligation 8/30/19	+33 9/17/19	Severe case; patient died
4	C. Z., 17435	+55 5/1/19 109*	Rest in bed	+12 10/11/19 78*	Lobectomy 10/12/19	+28 11/4/19 80*	Clinically improved; 4/17/20 rate +26; roentgen-ray treatments begun
						2/24/20	
5	P. O., 17296	+74 9/10/19	One week in bed	+45 9/20/19	Ligation 10/1/19	+34 1/29/20	Clinically improved
6	M. T., 17563	+38 10/25/19	Three weeks in bed; sodium cacodylate	+64 11/15/19	Lobectomy 4/7/20	+28.8	Clinically improved
7	V. A., 15852	+45	Rest in bed	....	Ligation 7/1/19	+45	Lobectomy later; +41.5, 4/23/20; +42.3, 5/5/20
8	R. W., 18083	3/19/19 +32 1/9/20	Four weeks in bed; sodium cacodylate	+ 2	.....	....	Rate rose to +11 just prior to patient's leaving hospital; patient now up and about
9	A. L., 18708	+19 4/3/20 109*	Sodium cyanid daily for six days	+32 4/14/20 110*	Roentgen ray	+23.5 5/10/20 105*	Clinically no change
				+33 4/18/20 110*		+22 5/14/20 56*	
10	V. Y., 18763†	+53 4/1/20	Sodium cyanid daily for five days	+33 4/17/20	Lobectomy; ligation of remaining tissue	+9.6 5/12/20	Improved after surgery

* Pulse. † Transferred to surgical department.

TABLE 7.—CONDITIONS IN TOXIC ADENOMA BEFORE TREATMENT

No.	Patient	Age	Sex	Thyroid	Pulse	Blood Pressure Systolic	Blood Pressure Diastolic	Tremor	Eye Signs	Loss of Weight	Nervous	Cardiac Hypertrophy	Grade	Metabolic Rate
1	K. L., 18213	18	♀	Large, adenomatous masses; vascular	90	100	70	+	0	10 pounds	0	+	2	Before KI —2 After KI +53
2	C. G., 18251	40	♀	Large, adenomatous; some colloid; vascular	70	...	..	None	0	0	Slightly	0	1	+31
3	C. M., O. P.	25	♂	Small, adenomatous	90	...	..	Slight	0	+	+	+	2	+25
4	D. T., 18351	23	♀	Small, adenomatous; vascular	90-100	130	80	Slight	0	+	++	+	3	+15
5	F. P., 18802	38	♀	Large, adenomatous; nonvascular	85	130	70	++	0	+	0	+	3	+28
6	M. A. F., 17807	50	♀	Adenoma of isthmus; lobes hypertrophied; nonvascular	80-90	154	75	+	++	As much as 50 pounds	+	+	2	+13
7	R. V., A. H. B.	18	♀	Small granular adenoma of isthmus	80-100	110	65	+	0	++	+	+	1	+10
8	H. O., 18730	38	♀	Adenoma of isthmus and rt. and lt. lobes	100	109	75	+	Slight exophthalmos	+	+	0	1	+20
9	H. S., 18051	21	♂	Diffuse, enlarged	80-90	...	..	Slight	Slight exophthalmos	++	0	+	1	+16
10	M. E., 18550	57	♂	Adenoma of left lower pole; nonvascular	80-90	110	70	+	Von Graefe; no exophthalmos	..	+	+	2	+45
11	B. W., 18829	31	♀	Large adenoma, rt. lobe; small adenoma, lt. lobe	90	122	65	None	Von Graefe; Möbius; exophthalmos	0	+	Slight	2	+15

19. Edsall, D. L., and Means, J. H.: The Effect of Strychnin, Caffein, Atropin and Camphor on the Respiration and Respiratory Metabolism in Normal Human Subjects, Arch. Int. Med. 14: 897-910 (Dec.) 1914.

20. Higgins, H. L., and Means, J. H.: The Effect of Certain Drugs on the Respiration and Gaseous Metabolism in Normal Human Subjects, J. Pharmacol. & Exper. Therap. 7: 1-20, 1915.

21. Hunt, R., and Seidel, A.: Studies on Thyroid. I, The Relation of Iodine to the Physiological Activity of Thyroid Preparations, Bull. 47, Hyg. Lab., U. S. P. H. S., 1909, 115 pp.

TABLE 8.—RESULT OF TREATMENT ON BASAL METABOLIC RATE IN TOXIC ADENOMA

No.	Name	Sex	Initial Rate; Date	Medical Treatment	Rate Following Medical Treatment; Date	Surgical Treatment; Date	Rate Following Surgical Treatment; Date	Comment
1	E.	♂	+48 3/13/20	None	....	Lobectomy, 3/14/20	+12 3/22/20	
2	P., 16862	♀	+28	Three months' rest; bromids	+ 5	Lobectomy, 3/1/20	....	Cardiac type; syphilitic
3	K. L., 18313 17948	♀	+18	Two weeks in bed	+27	Lobectomy, 2/28/20	+18 3/9/20	Simple adenoma; patient developed toxic symptoms after infection and potassium iodid treatment
4	D. T., 18351	♀	+15	Six weeks in bed	+16	Removal of adenoma, 4/9/20	— 6 4/17/20	Markedly improved clinically; choreiform movements ceased
5	B. W., 18029	♀	+15 +23 +21	1/10 grain sodium cyanid daily for four days	+35 4/18/20 +44.8	4 roentgen-ray treatments 1 week apart	+33 5/1/20	Two weeks of cyanid; rate increased to +45
6	H. O., 18730	♀	+20	Cyanid, 13 days	+12 4/14/20 +25, 4/17/20 +24, 4/24/20	Roentgen-ray treatments, 4/24/20 to 5/11/20; adenoma removed	+33 5/4/20	

TABLE 9.—BASAL METABOLIC RATE IN PITUITARY DISEASES

No.	Patient	Age	Sex	Diagnosis	Initial Rate; Date	Treatment	Rate While Under Treatment	Comment
1	L. K., 18731	33	♀	Diabetes insipidus	+30 3/13/20 —8, 4/18/20	Pituitary extract by hypodermic	+5* 3/20/20 +1.3, 4/20/20	Urine reduced from 11 to 3.5 liters
2	H. O., 293184	30	♂	Diabetes insipidus	—16 3/31/20	Pituitary extract	—4 4/19/20	Urine reduced from 10 to 2 liters
3	C. M.	30	♀	Diabetes insipidus	— 1 4/3/20	Pituitary extract	—1 4/19/20 +2, 4/20/20	Urine reduced from 10 to 2 liters
4	H. N.	28	♂	Diabetes insipidus	— 1 4/3/20	Pituitary extract	—1 4/19/20 +2, 4/20/20	Urine reduced from 12 to 2.5 liters
5	M. L., 18614	53	♀	Diabetes insipidus	+20 3/30/20	Pituitary extract by hypodermic; posterior lobe feeding	+10* 3/26/20 +2.8, 4/3/20	Urine reduced from 9 to 1.5 liters
6	E. T., O. P.	20	♀	Fröhlich's syndrome	+1.6 3/7/20	Anterior lobe feeding; 5 grains 3 times daily for 10 days	—1.2 4/11/20	
7	L. T. B., O. P.	24	♂	Fröhlich's syndrome	—1.2 12/15/19	Anterior lobe, 45 grains a day; thyroxin, 2 mg. every 3d day for 5 doses; anterior lobe feeding 45 grains a day; thyroxin, 2 mg. every 3d day for 5 doses	—2.2 1/30/20 +53.4 2/11/20 —5 2/25/20 +35.4 3/29/20	

* The marked fall from the initial level may have resulted from confining the patient to bed.

TABLE 10.—EFFECTS OF DIETS ON BASAL METABOLIC RATE IN DIABETES

No.	Patient	Age	Sex	Normal Diet			Starvation Diet Until Sugar Free				Highest Caloric Diet			
				Rate; Date	Pulse	Weight, Pounds	Days	Rate; Date	Pulse	Weight, Pounds	Calories; Date	Rate; Date	Pulse	Weight, Pounds
1	P., 18645	23	♂	—6 2/26/20	54	131.5	3	—20 3/31/20	52	127.5	1,220 4/17/20	—11.2 4/18/20	76	122
2	S., 18290	43	♂	—7 2/11/20	80	139	5	—20.3 2/15/20	80	140.5	1,128	—10 3/11/20	68	131
3	B., 18378	16	♂	+12 2/10/20	78	118	5	—7 2/20/20	50	118	1,508	—20 3/11/20	66	108
4	R. McG., 18670	79	♂	+4.5 3/29/20	70	145	1	+13* 3/31/20	56	141	1,900	—8 4/18/20	65	141.5
5	E., 15728	54	♂	+12.9 3/29/20	80	110.5	Ulcer treatment	—7 4/1/20	60	110	Sippy; 3 eggs daily	+0.9 4/18/20	55	110.5
6	L., 18397	53	♀	—10.3 2/20/20	90	125	Intermittent 5 days	—26.1 3/4/20	65	118	Never more than 1,500			

* Patient suffering greatly from pain associated with gangrene of the toe.

TABLE 11.—EFFECTS OF CYANID ON BASAL METABOLIC RATE

No.	Patient	Age	Sex	Diagnosis	Initial Rate; Date	Treatment	Rate Following Treatment; Date	Treatment	Rate; Date	Comment
1	B. W., 18029	31	♀	Toxic adenoma	+23.3 4/1/20	1/20 grain sodium cyanid twice daily for 4 days	+35.2 4/5/20	Rest; cyanid discontinued	+44.8 4/18/20	Patient growing more toxic; cyanid has no effect
2	A. L., 18702	15	♂	Exophthalmic goiter	+18.9	1/20 grain sodium cyanid twice daily for 6 days	+31.8 4/14/20	Dose increased to 1/20 grain three times daily for 4 days	+33.2 4/18/20	Clinically unchanged
3	H. O., 18730	28	♀	Toxic adenoma, cardiac type	+20 4/10/20	1/20 grain sodium cyanid twice daily for 6 days	+25.4 4/17/20	Cyanid continued	+24 4/24/20	Cyanid has no effect; discontinued 4/24/20; +33.2, 5/4/20
4	V. Y., 18763	31	♀	Exophthalmic goiter	+53 4/30/20	1/30 grain sodium cyanid twice daily for 3 days; 1/20 grain sodium cyanid three times daily for 2 days	+32.5 4/17/20	Transferred to surgical department	+21.9 4/30/20	Rest may account for decrease in rate

In three instances an increased rate resulted (Table 11). This is in keeping with the findings of Loevenhart,[22] who demonstrated a definite stimulation of respiration following the intravenous use of small amounts of cyanid. Whether or not this increase in rate persists was not determined, owing to some apprehension in regard to the continuous use of the drug.

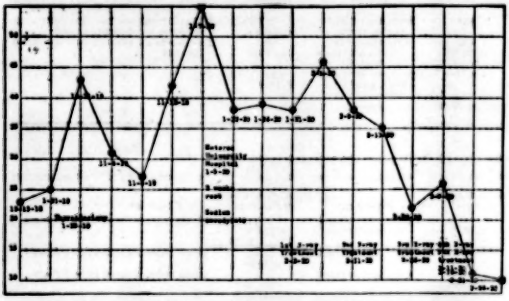

Fig. 4.—Metabolic rates in treated exophthalmic goiter.

CONCLUSIONS

1. The gasometric method of indirect calorimetry is a reliable and practical clinical method for determining the basal metabolic rate.

2. The basal metabolic rate is of the greatest significance in diseases of the endocrine system, particularly in diseases of the thyroid, revealing the extent of the increase in metabolism in exophthalmic goiter and in thyrotoxic adenoma, and the extent of the decrease in metabolism in cretinism and myxedema and allied conditions.

3. The basal metabolic rate furnishes an accurate index to the results of medical and surgical treatment of these conditions, and thereby becomes of value as a guide to treatment.

4. The basal metabolic rate is of value in revealing the effect of drugs on metabolism.

ABSTRACT OF DISCUSSION

Dr. Nelson W. Janney, Santa Barbara, Calif.: There is no more interesting proof of the value of pure research as applied to clinical medicine than the development of respiratory apparatus. An expert clinical and technical staff and a very large sum of money are required to carry out determinations properly. Recent developments are making it necessary to have at least a respiration apparatus in every medical clinic, for it is of great aid in the diagnosis and treatment of thyroid conditions. It is only fair to question a given laboratory as to the number of controls before accepting point blank even the basal metabolism results. Dr. Rowntree has shown care in his work of carrying out a sufficient number of controls before he used this method clinically. We must demand this at present. In our clinic cases are cropping up illustrating the possibility of a normal metabolism rate not always being an exact criterion of the patient's thyroid condition. As a rule, the return to normal of the respiratory rate is accompanied by marked improvement in the clinical symptoms. We have a few cases of hypothyroidism which exhibit a normal metabolic rate over long periods without satisfactory clinical results. I have also seen two cases of hypothyroidism, each having previously been subjected to a complete hysterectomy, in which it was impossible to bring the metabolic rate to normal without development of symptoms of a somewhat distressing nature, tachycardia, precordial distress and increase in nervousness. It is a question as to whether the loss of ovarian secretion also causes a depression of basal metabolism. This seems possible. Cases of hypopituitarism which show a decreased basal metabolism are also of interest. We have also observed a large fall in the metabolic rate (20 or 30 per cent., or even more) in diabetics undergoing long periods of undernutrition. It seems as though we should consider the fact of a low diet depressing the metabolic rate. We must, however, await further clinical observations before these points will be checked up satisfactorily.

Dr. H. S. Plummer, Rochester, Minn.: Dr. Rowntree's work corroborates what we have done at Rochester. Since 1910, we have used a clinical chart in hyperthyroidism so as to get a definite rate in every case. We differentiate between the rate from adenoma and the rate from exophthalmic goiter. In adenoma we have a pure hyperthyroidism. Exophthalmic goiter is not pure hyperthyroidism. In one series of cases the average ran within 1 per cent. of the average normal of approximately 39 calories per square meter, while in another series there was a deviation from normal in the basal rate. A patient without a thyroid gland has a rate between 38 and 39 points below normal. In general it takes about a calory of thyrotoxin to maintain the basal rate at normal. In the first case I gave 15 mg. of thyrotoxin intravenously. This is equivalent to about 200 mg. of thyroid extract. The next morning the rate was —17. This gradually raised until on the eleventh day it was 17 per cent. above normal. It remained above normal six days and in

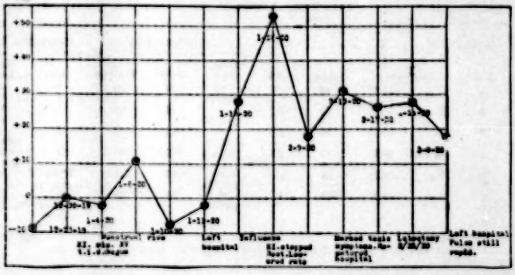

Fig. 5.—Simple adenomatous thyroid becoming toxic after potassium iodid and acute infection.

three weeks reached its preintoxication rate. This was the first attempt to establish the action and dose of thyrotoxin. The average does not vary more than one point from the figures we have obtained in administering this in about forty cases of high-grade myxedema. We have given thyrotoxin in various conditions and we never fail to get a rise in the metabolic rate, except in cases of exophthalmic goiter with a high rate and in cases of large colloid goiters with a large blood supply. In these cases we could give as high as 15 mg. intravenously without any fluctuation in the rate. We could do the same in exophthalmic goiter. Thyrotoxin has never fluctuated the rate in cases of exophthalmic goiter having a high rate. I think this is due to the fact that the

22. Loevenhart, A. S.; Lorenz, W. F.; Martin, H. G., and Malone, J. Y.: Stimulation of the Respiration by Sodium Cyanid and Its Clinical Application, Arch. Int. Med. 21:109-129 (Jan.) 1918.

gland picks up the thyrotoxin. Thyrotoxin is also picked up by the adenomatous goiter. If thyrotoxin is given by mouth there is no reaction. When it is injected intravenously there is a notable increase in rate. If a dose of thyrotoxin is given in other cases, there is a definite, progressive return to approximately normal unless complications are present in the case. All the other cases respond to intravenous doses in just the same way. A patient with a rate below .15 responds definitely to thyroid in myxedema—a differential point in diagnosis. If you give ⅛ mg. to a patient having no myxedema the rate remains normal. Also, patients with myxedema do not seem to absorb desiccated thyroid or impure thyroid. They are very much more apt to absorb pure thyroid. All patients with a rate down require two or three times the normal amount of desiccated thyroid or thyrotoxin to bring the rate to normal. Sometimes you can give 200 or 300 mg by mouth with a flicker in the rate, while 1 mg. given intravenously will bring the rate up. This has been very confusing. Many myxedematous patients say they are well when they are not. This same individual six or eight months later will have a normal rate and will be perfectly healthy. Then again we get the patient who within six weeks after he has lost his entire thyroid gland has developed a high grade myxedema. These patients will return to normal immediately on treatment. Young people who have been myxedematous for only a short time return to health.

DR. BRUCE C. LOCKWOOD, Detroit: As far as we know now, the thyroid has control of the metabolic rate, and an increased basal metabolism means hyperthyroidism, that is, if properly measured and the extraneous influences such as undue excitement, exercise and recent eating are excluded. Many patients formerly considered as psychoneurotics are really formes frustes cases of hyperthyroidism, and it is in this class of cases that the calorimeter has its greatest use. We have had about twenty patients who were treated with the roentgen ray in conjunction with the usual medical treatment. Our results have been excellent. The treatments are given two weeks apart. The basal metabolic rate falls about ten points with each treatment.

DR. LEONARD G. ROWNTREE, Minneapolis: Figuratively speaking, by the use of thyroxin we can convert the sluggish toad into an active frog. The effect following its intravenous injection is remarkable. The cretins who before treatment may have been extremely sluggish, after treatment begin to walk, talk and become playful and kittenish. It is rather interesting to note that the same type of reaction, i. e., marked increased activity, which accompanies the increased rate of hyperthyroidism as in exophthalmic goiter, is encountered on converting the low rate of hypothyroidism to that of normal. The relative increase in rate is accompanied by marked increase in activity, although the absolute rate is only brought to normal. We have had some difficulties with administration of thyroxin by mouth, but we have succeeded in holding some of the patients at a normal metabolism by oral administration. Our purpose is to bring the patients to normal and to hold them there. With intravenous administration we have never seen any reaction within twelve hours but have seen a large increase in the urinary output in from twelve to thirty-six hours. In some instances the rate has returned to normal within five days, but in others not until the tenth or twelfth day. The initial change, particularly the marked increase in urinary output, which may precede the rise in the metabolic rate, is of interest. The flushing of the face and the moisture of the skin may also appear early. Following an operation for adenoma of the thyroid, one girl went to bed and stayed there for ten years. We thought perhaps it was an instance of astasia abasia. She showed no signs of myxedema. We gave her thyroxin over a period of weeks; she became active, walked and finally left the hospital apparently normal. She did not show any signs of myxedema, even with a rate of —30. The psychoneurotics interested us a great deal. A high initial rate is almost constantly found in them. The question arises: Is this high basal rate normal for these individuals? In differentiating psychoneurosis from true hypothyroidism the time element is important. In these cases a series of daily readings may show a plus 40, plus 30 and plus 15, etc. In some instances within three or four days the normal basal metabolic rates may be obtained. We have had many cases where the rate has fallen to normal after operation, under which condition the roentgen ray is not necessary. At present we have a series of patients undergoing roentgen-ray treatment. This form of therapy should be tried at least in all cases where surgery has failed to effect a cure.

THE CAUSES OF EMOTIVITY, AND THEIR MANAGEMENT *

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It is now a commonplace that perturbations of emotion are frequent causes, not only of inefficiency, but also of ill health of the body itself. The physical consequences of emotion are well attested even in the laboratory. To the physician, this knowledge, while a satisfaction, is only a preliminary to the search for its application to the cure of disease. To this end he seeks, first, to recognize such diseases to differentiate them from others, and secondly, to remedy them. Recognition is difficult; for the presence of an emotive state is not enough to signify that the disorder is primarily psychogenic.

Many physical conditions are characterized by disturbances of feeling, emotion. Intoxications, many infections and visceral diseases all disturb the emotions, and often seriously. So do many diseases of the nervous system itself, such as cerebrospinal syphilis, disseminated sclerosis, neoplasms, and what are called the great psychoses. These are all disorders of somatic source, the emotional disturbances being incidental, and not susceptible of being dealt with fruitfully by psychologic means; for only the disappearance of a diseased bodily state will dissipate the morbid emotion in cases of this kind.

The emotions of psychologic origin are numerous. They are not confined, as some writers would have us believe, to sexuality. Not always are they the fruit of an internal conflict; not seldom are they quite independent of attempts to repress them.

For instance, a woman was frequently and explicitly animated by an intense hatred of her mother-in-law which she made no attempt to repress or conceal. This aversion she frankly expressed to her husband without any assuaging of the emotion, or of the suffering it induced, although she recognized that for economic reason it was impossible to split up the household.

Similarly of jealousy. In a number of patients no repression has been attempted, and the jealousy has not even been deplored.

Mortification is a very frequent disabling emotion. It is based on shame and is always due to an inadequate envisagement of the situation. This, in turn, has come about from imperfect knowledge of oneself, and this in turn has often been determined by circumstances giving a false perspective in relation to some mode of feeling or behavior. Quite often this has to do with sex material, but quite as often it is due to social causes and the inculcations of others in the family, in school, in business or in society. Intrinsically it is a fear mechanism; indeed, fear is by far the

* Read before the Section on Nervous and Mental Diseases at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1930.

commonest of the incommoding emotions. When acting chronically it shows itself as anxiety, and is so frequent that some writers have given a special name to the state: "anxiety neurosis." The French have further differentiated, and long ago called "anxiété" the more psychic manifestations, giving the name of "angoisse" when circulatory and respiratory manifestations are conspicuous. It is the state which the Germans call "angst."

Not fear itself, but the feeling of impotence is sometimes the dominant emotion. This may arise from a feeling of incongruity in the situation so marked as to appear insoluble. In some temperaments, rebellion and struggle against this is quickly replaced by resignation. This is particularly true of the incongruity which gives rise to the feelings of disillusionment. This is an emotion most destructive to the employment of the full activity of the personality in work or in human relationships.

It has been the fashion to say that the emotional aspect of all these situations is of transcendent importance in a psychotherapeutic sense. This error is only another instance of the very common one in medicine of being unduly swayed by the conspicuous presenting symptom. Surgeons have long ceased to depend for their judgments on the patient's idea of the relative importance of symptoms. To the psychoneurotic patient, the emotion is all important. To the discerning psychopathologist, the really important matter is the causative one. Now, an emotional situation is very rarely direct. One might almost say that it is invariably determined. It may safely be postulated that emotion occurs only when the subject perceives an occasion for it. The psychologic process is one dependent on sensation, perception, cognition—that is, intellection. This is so even in a rudimentary instance, as that of instinctive reactions of animals, as the scuttling of fish at the sound of a footfall, or a horse running in terror from a strange object.

The emotion is dependent on the perception. Physiologically, too, it may be stated that an emotion is always conditioned by a perception. This is just as true of emotions which appear autochthonous, endogenous. The emotion originally induced by a former perception is now induced by the recollection of it. However, through association another circumstance may supplement, or even be substituted in recollection for the original inducing circumstance, so that an idea apparently quite extraneous to the provocative one may seem at first sight quite incongruous with the emotion it seems to produce. The reaction is then adjudged as a morbid one although in reality it is a perfectly natural response to circumstance. The circumstance itself, indeed, in such cases is not merely what it appears. There has always been added to it an element unperceived by the uninitiated, which is the real determinant of the emotion produced in the subject.

For instance, listening to a sermon in a crowded church would not seem to be sufficient to arouse the emotion of terror to such an extent that it would prevent the subject thereafter from going to church, theater, or crossing the street. It was only sufficient in virtue of its association with a faintness and oppression which had occurred on one occasion. The significance of this association had not been grasped by the patient. Indeed, the circumstance was a memory apart. It was only when the patient was made to grasp the real significance of this circumstance that her belief could be changed regarding situations which for eight years had been arousing terror and panic, and had brought her to such a degree of inefficiency that she could rarely bring herself to cross the street alone.[1]

Even in the dream in which the content seems to be under the sway of the general feeling tone of the moment, in reality the direction of that feeling tone, and the elaboration of the imagery are dependent on former associations, which of course are the fruits of cognition.

IMMEDIATE EMOTIONS

It is just as true that the material of brooding or rumination is very often determined, not intellectually, but by the feeling tone, and that the judgments are thereby vitiated. The recognition of this is so universal, it is such a commonplace, that we can scarcely wonder that psychopathologists have carried into their studies of emotional manifestations the induction that the feeling tone determines the thought, forgetting entirely that while this is true, both of depressions and exaltations, yet that in the very different states of besetment the reverse is the case. To specify, the common saying "to have a jaundiced view" represents the man whose feeling tone, disturbed by physical agents, permits him to harmonize only with depressing circumstances. The disordered metabolism of the constipated or the hyperproteotic disturbs the feelings, so that automatically unfavorable or depressing points of view are more easily adopted than cheerful ones. The consumptive, whose metabolism is speeded up to produce reactions by which to cope with the invasions of the tubercle bacillus, finds his feeling tone stimulated and active; hence he is in harmony with cheerful, hope-giving situations, and passes by without notice the circumstances of depressing character. None of these reactions, nor the many others like them, are ratiocinative. They are purely instinctive and depend on autonomic states. They are not controllable directly by will. The impotence of psychotherapy in such situations is represented by the adage: "Never yet saw one a philosopher with the toothache." It is a truism in business not to expect a judicial decision the morning after a debauch.

THE MEDIATE OR INDUCED EMOTIONS

The contrary mechanism is so simply exemplified experimentally during the study of the secretory sequences of emotion that it is surprising that there are still those who fail to give it due significance. In all the experimental instances it is necessary to provoke the emotion studied by first inducing the cognition of the situation by the animal or the human being experimented on. But without any experimental instances we can again resort to common experience in studying the effect of bereavement or ruin of the mechanism which determines the stampede of a crowd, of the various methods of suggestion, such as the flowing of tears in witnessing a melodrama, or the indignation at the abominableness of the villain in a romance.

Such emotions as the anxiety so often contingent on the accomplishment of work under another, or the fear of losing one's position, or the fear of failure, when analyzed, will always be found to hinge on apperceptions.

No situation apperceived can be divorced from elements contributed by the percipient. To no two men

1. Agoraphobia and Claustrophobia Removed in a Week, Philadelphia Neurological Association. A complete discussion of this case is given, International Clinics 4, 1919, under the title "Differentia of Phobias and Obsessions."

is a given situation alike. This has been expressed in Hamlet by the remark: "There is nothing either good or bad, but thinking makes it so." It is, therefore, the patient's attitude of mind toward the situation that develops the emotion regarding it which disturbs him.

As a matter of fact, however, this is not autochthonous. It is invariably induced. The induction is usually performed by the mechanism of suggestion. This may occur at the moment itself through the word of another directly applied, as when the nurse says to a child, "Do not be afraid," thereby clothing the situation with the idea of danger, regarding which the emotion of fear is legitimate. The suggestion, however, is usually far less simple, and often depends on a logical induction, though of course always unaccompanied by full knowledge of true relationships. For instance, the so-called birth phantasies are frequently constructions of a child's imagination fabricating an explanation by conjoining, with the untruths he has been told, the facts he has observed.

Too frequently to the child are presented utterances in which error or mystery is implicit. Over and over again do psychopathologists find constructs arising logically from material in which the careless word of an elder did not recognize the implicit emotion for the child.

For instance, a feeling of impotence, and hence a diffident emotion regarding the subject of Latin, was the unfortunate heritage donated to a boy by the injudicious insistence of an elder brother that he was too stupid to study the classics. The fixed idea that resulted vitiated his life by turning him in an artistic direction, for which he was ill fitted, and preventing him from going into professional life, for which his scientific mind would have been admirably adapted.

A woman acquired a habit of mumbling because as a child she was ridiculed on account of the shape of her mouth and its size when she laughed. In the endeavor to minimize the conspicuousness she avoided opening the teeth widely, with extensive movements of the lips, thereby affecting the distinctness of her articulation.

Indeed, stammering is very frequently induced by dread of making an error of speech, or misstatement of fact, or of saying something that will arouse mockery. The induction of this emotion is a function of overstressing by parents or guardian, which acts through a mechanism involving in the speech what golfers call of stroke, "pressing." Having failed several times, especially after ridicule, the child is expectant of future failure and becomes ashamed of it. In consequence, he develops phobia at the prospect. The phobic state in turn induces such physical consequence as embarrassed respiration and tautening of phonatory muscles. This in turn may lead to the use of artificial devices in speech, which temporarily assist, but eventually have also to be got rid of when the stammering is dealt with.

THE PRINCIPLE

All this psychologizing would be superfluous were it not that it is absolutely essential for the clear understanding of the principle of the induction of emotion. It is by a grasp of this principle that the psychotherapeutist can best recondition his patients' reactions in such a way that circumstances which formerly induced distressing or incapacitating emotions shall no longer do so. This is most easily done by the patient when he is made to ascertain the component of the situation which really induces the fear. In consequence he can then imbue the situation with the feeling which to it is legitimate. This readjustment cannot always be effected at once. Practice may be required in concentrating on the efforts needed, for in some individuals the very attempt to consider the situation at all calls into play the very emotion which the whole process is designed to undermine. This, however, is merely a matter of habit, and with practice does not take long to overcome. Very often the reconditioning is precipitate, if not at the first interview, then as a culmination or explosion, so to speak, of a consistent effort during several days. It may take even longer.

Obsession in these cases is merely the haunting of the patient by an idea distasteful to him because of some emotion accompanying it. The distress experienced by these patients during their ruminations is a legitimate enough accompaniment of their failure to direct their thoughts into channels which they believe are more proper or useful. But for the emotional element of the obsession it would cease to beset.

Of the tics, which are impulsions, and of course psychogenic, the same thing is true. They are derived from a movement of purposive intent. The movement has been originally adopted either to avoid discomfort in the part moved, or in response to reactions toward psychologic discomfort.

Thus, one woman felt impelled to turn her head to the right and behind, because there sat a fellow worker with whom she urgently desired an explanation regarding a misunderstanding.

Another woman turned her head to the side away from which her niece used to walk because of the fact that this girl had become engaged to a foreigner, and the aunt was strongly imbued by the belief that marriages with foreigners turned out badly; this because of her experience with many in her family and among her friends. Hence, she could not bear to look at her niece on account of the apprehensive grief at the prospect of losing her to misfortune.

Of course, the patients were not aware of these reasons. They had to be sought.

MANAGEMENT

The treatment of morbid emotions of this kind, then, depends on the finding of the situation, the prospect of which determines the emotion. It is with the cognitive element of this that we must deal by persuasion. Although we say that we change the mental attitude of the patient, we in reality change the situation itself by adding to it or subtracting from it the elements which arouse the incommoding emotion.

To do this is an art, and of course requires practice; but no amount of practice is of value unless the mind of the operator is directed toward the proper steps to be taken in performing his physiologic operations.

EXTRAMURAL METHODS

It is true that similar reconditioning of mental attitudes and changing of emotions have always been accomplished by means of religion, philosophy, through charlatans, and by accident; but these agencies all possess serious inconveniences. The modification of the patient's religious belief is not the legitimate function of a physician. The practice of psychotherapy by priests is ineffective, as a rule, because they have not acquired the necessary knowledge of neurology, without which errors of diagnosis are inevitable; nor do they know the kind of psy-

chology necessary for psychotherapeutic reconstruction. Indeed, this kind of psychology requires as an essential basis a sound knowledge of physiology, as well as a very thorough knowledge of clinical psychopathology.

Thus, a sea captain was referred because of distressing facial tics which prevented him opening the eyes at will, so that he could not go about alone without great distress, and could not read at all. The tic was the product of the anxiety induced by intense naval responsibility during the war. The systolic blood pressure was found to be 107, and the diastolic, 63. This I attributed to depleted endocrines. Suprarenal substance quickly raised it to 152 systolic, 108 diastolic, more in conformity with the state of stress at his age, 50. The stoppage of suprarenal substance and reduction of protein then permitted a fall to his norm, systolic 125, diastolic 90, the psychotherapy that cured the tic having also permitted recuperation from exhaustion.

Laymen are not trained to make differentiations of this kind, and the need for them is constant in the practice of medicine, to which the psychologic branch is no exception.

The same reasons make dangerous the work of philosophers and psychologists with these patients. It is still more true of the pseudoscientific modern religious movements which have healing as a function. In one of them, indeed, a destructive negativism is the keystone of the treatment. If the patient can be made to believe that no situation is evil, that which has aroused his inconvenient emotions necessarily ceases to do so; but the negation of reality is far too heavy a price to pay for the dispersal of an inconvenient emotion. The remedy is worse than the disease.

Thus, exhaustion is not only a cause of emotivity; but in some instances it is caused by prolonged emotions. The intricateness of these mechanisms is one of the vicious circles so much spoken of many years ago. Proper delving into genesis eliminates much of the imprecision attached to these cases.

The occasional removal of emotion by charlatans is effected by suggestions usually masked in physical measures, which then act by chance in accordance with the principles set forth in this presentation, namely, the reconditioning of the patient's attitude toward the situation. But when the charlatan does so, it is by accident, so to speak, and without the least knowledge of the great principle at work; hence he very frequently misses fire.

Accidents are sometimes efficient.

Such was the case of the man who had not walked for seven years, after a street car accident, for which he was heavily indemnified, until one night after the plaster fell from the roof his wife found him sitting in the chair in the corner of the room trembling with fright. Thereupon she induced him to make the necessary efforts to stand and walk, the success of which dissipated his phobia regarding his power of maintaining equilibrium.

As against the numerous failures of any of these methods, the almost universal success of the sound method of rational persuasion forms a striking contrast. My personal experience of twelve years shows that it is quite unusual that a morbid emotion cannot be dispelled and permanently so, and that the time taken to do so is more often less than a week than more than a month. The cure of emotions in military life, as during the great war, shows that these pretentions are well justified, and that such success should be the rule and not the exception.

ABSTRACT OF DISCUSSION

Dr. Julius Grinker, Chicago: There is no doubt that Freudism is responsible for a flood of publications of the type that Dr. Williams has given us today, and many of these papers differ from each other only in that they use another phraseology. To practice neurology successfully, we must follow the various methods of psychotherapy and choose the method that will suit the individual case. A neurologist who knows how to get into the psychology of the neurotic will be able in most instances to get at etiologic factors without much trouble. But this alone does not cure the patient. It is a question largely of the susceptibility of the patient to suggestion, and no matter how I may struggle against accepting such a view, I think after all the successful treatment of the neuroses is due entirely to suggestion.

Dr. David S. Booth, St. Louis: I have not been able to get away from the physical basis of the psychoses. I believe that the fundamental element in the production of these psychoneuroses is in the anatomy or physiology or histology, whichever one may appear in a given case. I have not yet accepted the theory that these conditions are caused by suggestion or that they are cured by suggestion entirely. The fact that many of these patients recognize the error of their obsessions shows that they cannot be cured, in all cases at any rate, by suggestion. Such cases show that the disease is not caused by the idea, but by some physical condition of the body. The basis is there, and the idea is the result of this anomaly. Faith cure, or psychotherapy, if you want to give it a name that will be accepted by the medical profession, simply gives these people a settled philosophy of life. If their condition is not severe, by which I mean if the changes in the nervous system are not great, they will, perhaps, recover from that treatment alone. But I believe that in all cases the physical basis of the condition should be treated, at least in conjunction with the mental element.

Dr. Hyman Climenko, New York: There are distinct psychic traumas, distinct psychic conditions, that produce neuroses, and these neuroses are cured by psychic methods, whether Freudian or Christian science or rabbinical, etc., does not matter. The Freudians have contributed largely to the study of psychology, although they have not in the matter of treatment and cure. I know of many cases in which psychanalysis has aggravated the condition. Dr. Williams mentioned high blood pressure. This is often produced by psychic trauma, in which case, the high blood pressure will be reduced simply by talking with the patient and appealing to his reason, in other words, using one or the other type of psychotherapy.

Dr. Karl A. Menninger, Topeka, Kan.: There is constant talk about curing patients by "persuasion," by "suggestion, by "explanation," by "analysis" but by what particular technic is rarely indicated. It is rarely clear whose method is used or what particular steps are taken; consequently these men only encourage the skepticism of those whom they would convert. I suggest that they come to this meeting and stage an impromptu session of this kind; have a voluntary patient from among ourselves come forward and be treated by the method of the author's choice, here in front of us all. Then all may see what the psychotherapists do instead of hearing about persuasion or reeducation or readjustment by name only which never gives much to some of us because we do not know what the psychotherapist does when he does it, or what he means when he says it.

Dr. C. F. New, Indianapolis: In regard to the psychogenic origin of the underlying ideas of anxiety, which is the basis of the majority of the fears which beset these patients: A close analysis of a large percentage of these conditions will disclose the fact that there is an underlying source of worry which the patient is trying to overcome and which he does not want any one else to know about, and until that phase of the condition is cleared up or it is suppressed there is no peace of mind for that individual, no matter what you do. Before any psychotherapist or anybody else can make any impression, he must secure the confidence of the patient, and the best way to do this is by detailed, careful examination of the patient, his history and his present condition.

DR. ROSS MOORE, Los Angeles: One neurologist will say that it is impossible to make these people better, while another will say that a great deal can be done by psychotherapy. Both are right, although seemingly opposed to each other, and the reason is this: One man has in mind the classification which refers to the individual whom I call the essential inadequate—the individual who is narrow and cannot be otherwise.

DR. G. H. BENTON, Miami, Fla.: Even here, before a body of neurologists and psychiatrists, the personal reaction to the words psychanalysis and psychotherapeutics tends to bring about at once a very marked personal equation, individual in character, and of emotive quality. This is the very thing that is occurring continually in psychoneurotic patients who are very limited in their field of apperception. Therefore, they lack judgment. Their emotivity has a great range and is very vacillating, but the means which we use to reach them, or in other words, the tools we use, remind me very much of our automobiles. They are selected by virtue of our particular choice, but we all "get there" just the same. And so it is with the neuroses. We accomplish results first, by our own understanding of the case, through our own methods, by our own individual possibilities, by first determining what exists and then by inquiring of the patient what does this mean to you, what does that mean to you, what does this situation lead to, and how do you react to it, and, then, by trying to interpret these things, and to determine further if the patient actually understands the words we use as we understand them. We often observe ourselves jumping around from one theory to another because it does not quite appeal to us or because we can find methods by which we can reach our patients and help them in spite of the individual equation—the patient himself. The personal equation is one of the greatest difficulties we have to contend with. This involves the personal equation of the physician as well as the personal equation of the patient. We are dealing with these things in our hospitals for the psychoneurotics. We are able to reach them to a greater or lesser extent but through very varied methods. Some are brought back to their former mental and physical level, others somewhat above that level. Although sometimes an immense amount of time is spent to attain the results and to insure their permeability, we are getting at it in our own individual ways.

DR. GUSTAVE ROUSSY, Paris, France (Translation by Dr. Williams): Babinski has long maintained that emotion is only an accessory or adjunct factor in these cases, the real factor being the suggestion, and that the emotion quickly disappears when counter suggestions are made. On the other hand, Dr. Roussy and his colleagues, along with Professor Dejerine, contend that the emotion is rather the primitive factor, because people are constitutionally or otherwise over-emotional, and they react in this way to the occasions which arouse the emotion. They think that their experience in the war confirms this opinion, while Babinski and his followers believe that the war confirms theirs.

DR. GEORGE A. MOLEEN, Denver: I think we are privileged to speak of the neuroses as attributable to high elevations, since we find that the susceptibility to this emotional shock, to suggestion, to the other irritable influences, disappears when these persons seek the lower levels, such as the seashore. Some persons cannot live in the high altitudes because of the nervousness induced thereby. They could go to the seashore and become quite relieved and comparatively calm. In the war department manual is given a very clear description of the increase in nervous excitability experienced in high elevations. This, as I pointed out sometime ago, is due in large measure to the lowering of the blood values, the cellular and chemical elements, particularly the hemoglobin. Of course, we recognize the importance of constitutional inferiority and the relation of this constitutional inferiority to the endocrines as well as the conditions on which these high degrees of suggestibility may be premised. Not only do we have disturbances due to the hemoglobin and corpuscular diminution which was observed by Haldane, Barcroft and the men who headed the Anglo-American Pike's Peak expedition establishing the data with reference to the blood, but we can also look to the calcium deficiency as reducing the stabilizing character of the protoplasm so far as irritability is concerned. I do not believe that we should rely too strongly on the external influences, although they have their exciting possibilities, but we must also keep in mind the somatic disturbances and those forces which relate particularly to the body metabolism.

DR. TOM A. WILLIAMS, Washington, D. C.: In my paper I adequately took care of all the physical causes which some speakers have brought forward. Such conditions as essential inadequacy or constitutional psychopathy we are not considering. What Dr. Neu said is justified—we must make the patient cure himself. When dealing with an inadequate you cannot expect of him what you would expect of a normal man. I deal here therapeutically only with cases in which the induction is purely psychogenic. In certain physical states the emotivity is exalted. In hyperthyroidism, for instance, all these factors are highly exalted; you cannot expect to cure that patient's emotivity by psychotherapy. We can only carry these cases along and help the physical treatment. Babinski has helped us to differentiate between organic and functional nervous disease. The differentiation depends largely on the anamneses and partly on the results of treatment. I tried to emphasize that all the emotive reactions of the kind of cases I speak of are purely secondary to the conditioning of an apperception, just as the animal which reacts from the emotive standpoint does so simply because of the apperception of the bell and the meaning attached to bells. As to the challenge to demonstrate a particular method, I am willing to do it, provided the right kind of case is selected, and inasmuch as certain patients have difficulty in doing this before audiences we must have privacy; and a patient should be chosen in whom a rapid cure is possible, and there are many. In the long standing cases that does not suffice: we must penetrate to the foundations of this thing, find the mechanism and reorientate the patient. It takes longer and one has to be familiar with psychopathic disease. It is not a matter of phraseology, it is a matter of principle. Suggestion must be religiously avoided. It is not upbuilding.

We do not need to interpret these things by dualistic philosophy. It is a monistic phenomenon purely. Psychologic reactions are physical reactions in reality, stated, however, dynamically and qualitatively only, as against those of the chemist which are stated ponderately, and those of the physicist which are stated quantitatively.

ENDOCRINE IMBALANCE IN THE FEEBLEMINDED *

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The close relationship that exists between the internal secretions and the central nervous system has long been known. The fine changes of temperament associated with the early stages of pregnancy, the varying neurotic conditions, from slight unrest to grave neurasthenia, that result from a dysthyreosis, is common knowledge of the observant internist and the trained neuropsychiatrist. So impressed were the ancients with the relation of the generative and gonadal influences on the mentality that they regarded the seat of hysteria in the uterus and named it accordingly. Cretinism is an example of a recognized endocrinopathy. The constant association of the athyrea with the marked hypophrenia and microsomia, disproportionate tissue growth, and other characteristics, stamp it as a frank ductless gland disease. The marked resem-

* From the Laboratories of the Massachusetts State Psychiatric Institute.

* Read before the Section on Nervous and Mental Diseases at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1930.

blance of certain factors in other kinds of feeblemindedness with developmental anomalies, uneven growth rate,[1] and various general and special tissue changes to the cretinic hypophrenia, has shown the desirability of further information in regard to the endocrinous factors in feeblemindedness in general.

From the results of careful experimentation in physiology and biochemistry, and accurate clinical observation verified by pathologic study both during life and after death modern scientific opinion is agreed that the development and growth of the animal organism is regulated to a great extent by definite and potent highly complex chemical substances called hormones, the internal secretions of the ductless glands. A constant change in the chemical balance occurs with the progressive periods of growth, more or less independent from the daily or continuous physiochemical balancing of the metabolic functions of the cytoplasm constituting the immediate life.

Besides this hormonic or chemical connection or interrelation between the various parts of the body we have another system which binds the parts together, namely, the neuronic or nervous system. It is by a smooth and well-ordered interworking of the neuronic and hormonic connecting systems that a being is kept in normal poise. An interruption of the nervous or electrical control, or a disproportion between the various elementary substances or internal secretions forming the chemical combining system, or an altered condition of one or more of the constituent hormones, will destroy the balance between the two systems and result in an abnormal or pathologic state.

A great deal of attention and research has been devoted to the nervous control both of the body and also its influence on the glands of internal secretion. I now propose to study the relationship to, and effects of, the internal secretions on the nervous system. As regulators of metabolism, to use the words of Noel Paton, they exert an influence on the growth and function of the brain and nervous system in general, as well as on the rest of the organism.

As a basis for this study, 100 cases of feeblemindedness that came to necropsy have been taken in chronological order from the pathologic service of the Massachusetts Commission on Mental Diseases. They include cases from the Massachusetts schools for the feebleminded at Waverley and Wrentham, and from other state hospitals.

The cases had been studied clinically in the routine method at the various institutions and after the standardized system developed by Dr. W. E. Fernald at the Waverley School, including Binet-Simon intelligence ratings. The necropsies were complete, including head, cord and soma in all cases, and were performed by Drs. M. M. Canavan and D. A. Thom according to the inclusive method outlined by Southard. The data, clinical and postmortem, were all collected in the usual way, symptoms and signs and pathologic changes and findings being noted by the regular examination methods. Thus, neither during life nor at necropsy was there any particular or special attention given from the endocrine point of view.

Data have been collected from a gross pathologic study of this series of brains and somatic organs, especially the ductless glands. In one third of the cases a microscopic examination of the glands was also made. Aplasia, hyperplasia, pigmentation and interstitial change not due to age, glandular proliferation, anomalies such as absence or accessory organs with lessened or increased function, besides special changes in the secreting epitheliums and cells of the individual and various glands are the main factors included in our summation of the changes.

In a previous study,[2] the question of syphilis was considered. Attributing inflammatory and exudative changes, such as early arteriosclerosis, aneurysm, chronic periostitis, saddle nose, chronic meningitis and vascular changes of a doubtful nature to syphilis, we found eleven cases among those in which there were gland changes. Wassermann reactions were not obtained in many of these cases, so that reliance on grosser pathology was necessary.

TABLE 1.—GLAND CHANGES

	Number
Extreme	10
Marked	11
Moderate	53
Absent	26

The incidence of glandular change is shown in Table 1. Under the designation "extreme changes" are classed those cases in which three or four glands were involved and in which there were marked anomalies of growth, underdevelopment, disproportion of body parts, such conditions as dystrophia adiposogenitalis, etc. There were two cretins.

In the second group eleven cases showed marked endocrine signs, in which at least two glands were involved, correlated with distinct changes in growth and anomalous development. Combining the first two groups, we have 21 per cent. of cases showing presumptive evidence of marked internal secretory disturbance.

The third group included fifty-three cases in which changes of one or two glands were demonstrable, with irregular and unusual combinations.

Gland changes were entirely absent in twenty-six cases.

TABLE 2.—PERCENTILE ANOMALIES

	External	Visceral	Cerebral
Paresis (100 cases)	23	29	27
Hypophrenia (60 Cases)	73	58	75

A tabulation of anomalies (Table 2) divided into external somatic, visceral, including the ductless glands, and cerebral, showed an interesting comparison. In the absence of data on normal individuals, 100 cases of paresis were selected. Paresis being in each case an acquired disease, it was assumed that they might be potentially representative of the normal type.[3]

The marked preponderance of anomalous manifestation in the feebleminded over the cases of acquired disease is striking. Attention is called especially to the third or cerebral group, in which 75 per cent. of hypophrenics showed anomalies, compared with only 27 per cent. of the acquired-disease cases, as significant of a possible influence of the growth regulating secretions on the development of the brain.

Among anomalies of development the stature first demands attention. Our observations on height

1. Goddard, H. H.: Height and Weight in Feebleminded Children in American Institutions, J. Nerv. & Ment. Dis. 39: April, 1912.

2. Raeder, O. J.: A General Nosological Grouping of One Hundred Autopsied Cases of Feeblemindedness, presented before the New England Society of Psychiatry, September, 1919.

3. Only sixty of the hundred cases were selected to compare with the 100 cases of acquired disease because the combined 160 necropsies were performed by the same hand, insuring a more even and regular observation.

agree in a general way with those of Shuttleworth,[4] Tarbell,[5] Wylie[6] and the compilation of statistics by Goddard[1] in that we found the majority of patients undersized. In Table 3, percentile figures show 60 per cent. varying from the normal, of which 51 per cent. were undersized and 9 per cent. taller than the normal given for their ages. Thirty-eight per cent. were normal, allowing a variation of 10 cm. as within normal limits. Data were not available in 2 per cent.

TABLE 3.—HYPOPHRENIA: STATURE IN ONE HUNDRED CASES

	Per Cent.
Undersized	51
Oversized	9
Normal (± 5 cm.)	38
Unknown	2

The question of growth has been studied experimentally in tadpoles by the feeding of various ductless gland substances in the laboratories of Gudernatsch and others. Gudernatsch[7] has shown that tadpoles fed with thymus are overgrown and underdeveloped; also that examples of the same hatching fed on thyroid develop more quickly, but at the expense of size and weight.

In the curves on growth, Tarbell,[5] and especially Goddard,[1] have shown that hypophrenics grow faster but stop sooner than normal children. Allowing for differences in comparative anatomy, the question arises whether this phenomenon may not be due to an imbalance of the thymus and possibly later also of the pituitary gland. Certainly the same overgrowth of the thymus-fed tadpole corresponding to increased height and weight in the preadolescent stage of the feebleminded, as shown by Goddard's tables, and the underdevelopment or immaturity of the tadpole can be correlated later with the stunted development and hypophrenia of the abnormal child.

The incidence of changes in the individual glands is shown in Table 4. The pituitary gland was found

TABLE 4.—ADENOSES

	Per Cent.
Thyroid	19
Pituitary	40
Suprarenal	27
Sex	38
Thymus	12
Others	6

involved oftener than any other gland, in 40 per cent. of cases. The sex glands, the seat of numerous anomalies which brought their score up considerably, were second with 38 per cent. The suprarenal showed involvement in 27 per cent. of the cases and the thyroid in 19 per cent. It is noteworthy that the thyroid falls so low in the scale. With the frequency of thyroid disturbances one might expect a larger number of cases showing a pathologic condition of the thyroid.

Numerous cases showed various combinations of glands involved. Table 5 gives the pituitary polyadenoses. It was involved singly in fourteen cases. Pituitary with gonads, in nine cases, was the most common dual adenosis, though there were combinations of sex and thyroid in four instances, sex and suprarenal in four cases, and in three cases the thyroid pituitary and gonads were affected in triple involvement.

TABLE 5.—POLYADENOSES

	Number
Pituitary	14
Pituitary, Sex	9
Pituitary, Suprarenal	5
Pituitary, Other Glands	11

Furthermore, there were six cases in which the gonads were combined with three other glands; two included the gonads, thyroid, pituitary and suprarenal; two, gonads, thyroid, pituitary and thymus.

Of the third two in which thyroid, pituitary, suprarenal and sex glands were involved, one was a female cretin, and the other an obese eunuchoid idiot who had been castrated in early life. He showed all the typical characteristics — undeveloped penis, and feminine appearance of breasts and extremities, with flabby pendulous abdomen.

REPORT OF CASES

In order to illustrate the striking endocrine characteristics that were found in many cases of idiocy and imbecility, two of the cases have been individually charted and are shown in Figures 1 and 2.

CASE 1.—*History.*—Figure 1 represents a male idiot, aged 10 years. He was admitted to the Massachusetts School at the age of 6. He was 3 feet 9 inches tall and weighed 43 pounds; he was poorly developed and nourished, had chronic bronchitis, had a dry, coarse skin and sparse, coarse, wiry hair; there was a systolic heart murmur at the apex; the genitalia were infantile; there was an umbilical hernia, a protruding abdomen and poorly developed muscles; the hands were thick and short, with stubby fingers; the forehead was bulgy, the face asymmetrical, with large protruding ears; there was a chronic discharge from the nose; the tonsils were enlarged, with adenoids and a fissured tongue. There was some question whether or not the patient was a cretinoid idiot.

There were six children, of whom the patient was the second. The first three children resembled one another rather closely, and all died at the Massachusetts School for the Feebleminded. Three later children were normal, one dying in infancy of diphtheria. An uncle and a sister of the patient had spinal trouble; the sister in question became partially blind. There was a feebleminded and epileptic great-aunt. One of the mother's sisters was migrainous and obese; one living child of the sister had one arm not fully developed. Both the patient's mother and maternal grandmother are stated to have been nervous, and the patient's grandmother was also migrainous. On the father's side one sibling was deformed with spinal curvature. There was also an epileptic and feebleminded great-aunt.

The patient began to talk at about 1 year and to walk alone at 19 months. Peculiarities were first noted at 2 years. The patient had a peculiarity in speech, using "d" for the first letter. He was able to help in dressing and undressing himself and to feed himself with a spoon or fork.

School Progress, School Examination, Practical Knowledge and *Economic Efficiency* were all nil.

Social Reactions.—The patient was stubborn and irritable, running about in his own way, screaming when touched to be dressed or undressed, spitting on the floor, and yelling if he did not wish to be moved; he would not eat if any one was looking at him; he had lost capacity to feed himself, throwing food about; he was attracted by striking colors in dress. If given a toy, he would go by himself to play with it, screaming if another child went near him.

4. Shuttleworth, G. E.: Health and Development of Idiots Compared with Mentally Sound Children, Proc. Assn. Med. Off. Am. Insts. Id. & F. M., 1876-1886, pp. 315-322.

5. Tarbell, G. G.: On Height and Weight and Relative Rate of Growth in Normal and Feebleminded Persons, Proc. Assn. Med. Off. Am. Insts. Id. & F. M., 1876-1886, pp. 188-109.

6. Wylie, A. R. T.: Contribution to the Study of the Growth of the Feebleminded in Height and Weight, J. Psye.-Asthen. 8:2-7 (Sept.) 1903.

7. Gudernatsch, J. F.: Feeding Experiments on Tadpoles, Arch f. Entwickl. d. Organ. 35, No. 3 (Dec.) 1912; Am. J. Anat. 18, No. 4 (Jan.) 1914.

Psychologic Test.—The Binet test, performed in May, 1914, at the chronological age of 8 years, gave the mental rating at 1 year.

Further History.—The patient required nursery care. He was in the hospital and infirmary most of the time, with untidy habits. He had frequent illnesses, including chickenpox, measles, bronchitis and indigestion; he grew thin and developed a cough in November, 1915; he had a slight unilateral convulsion with twitching of the right side of the face. There was severe dyspnea with mucus in the throat and a weak pulse. The patient showed symptoms of meningitis and remained comatose. Three days later slight paralysis of the right side developed, followed by death the next day. The cause of death was meningo-encephalitis and hydrocephalus.

In Figure 1 are shown, first, the small stature and general microsomia; secondly, hydrocephalus; this was considered as being evidence of syphilis. A postmortem Wassermann test was negative on the serum; thirdly, various dystrichoses, namely, hairy growth over the chest and abdomen, upper arms and forearms; abundant hair on back and neck, with absence of crines pubis and axillary hair. Over the head it was coarse and rough and arranged in multiple cowlicks; fourthly, microphallus, the penis being small with redundant prepuce. Besides these anomalies and abnormalities, the pituitary was cystic, and there was little sign of activity in the secreting cells of the anterior lobe and marked increase in the pigmentation of the posterior lobe cells.

ENDOCRINOSIS IDIOT
MICROSOMIA
HYDROCEPHALUS
DYSTRICHOSES
MICROPHALLUS
HYPOPHYSITIS
LYMPHNODITIS

Fig. 1.—Case 1.

ENDOCRINOSIS MONGOLIAN IDIOT
MICROSOMIA
HYPOTHYREOSIS
HYPO-ADRENIA
HYPERTHYMIA
OVARITIS
HYPOPHYSITIS
LYMPHNODITIS
DYSGENITALISM

Fig. 2.—Case 2.

Case 2.—*History.*—Figure 2 represents a female Mongolian, aged 18 years, who rated 3½ by the Binet intelligence scale. She was admitted to the Massachusetts School at 8 years of age. At 17 she was 4 feet 6½ inches tall and weighed 72½ pounds. She later increased 12 pounds in weight. The patient was fairly well developed and nourished; she was a mouth breather. The skin was coarse, the circulation poor; the heart sounds weak, with systolic murmur at the apex; the heart was enlarged; the fingers and toes were short and blunt; the face was asymmetrical; the eyelids were inflamed, the nose flattened, the tonsils large, and the tongue fissured. The Wassermann test was negative.

The patient was the first born of two children. The younger brother is normal. The father had an enlarged heart; he was of a gouty, asthmatic diathesis and died of a paralytic shock. He had an epileptic seizure at the age of 30, and two more after marriage, one just previous to the birth of the patient. He had a violent temper and was subject to severe headaches. The parental fraternity was further checkered with nervosity and paralysis agitans, and there was a question of insanity. On the mother's side two brothers were epileptic, and a sister was backward. Two brothers and one sister are described as normal. A distant cousin had schizophrenia, and her brother was hypophrenic.

Peculiarity in the patient was noticed at 1½ years. She began to walk and talk at 2½ years; she was never able to say such words as "or" and "if"; she did not know the alphabet and could not read or count. She was tidy and could aid in dressing and undressing herself; she could use a spoon but not a knife and fork, nor could she tie her shoestrings. She was described as sometimes obedient and as being fond of picture books and blocks.

School Progress and *School Examination* were nil.

Social Reactions—The patient was quiet and inattentive; her name had to be spoken to attract her attention.

Waverley School History.—The training class records show a deficiency in industrial adaptability. At 12 years she was described as clever at playing simple games, catching a ball, etc. Later on, after the age of 12, she learned to sew and use scissors well. From 1905 to 1909 (age 9 to 13 years) she showed slow but definite improvement. She had changed under training from a repulsive, drooling, finger-sucking, untidy, stupid patient, taking short, choppy steps, to a tidy patient who had completed the first school course and had begun to take part in manual training. Her resistance to disease was low; she was subject to infections of various kinds. She was admitted to the hospital ward, April 23, 1915, with severe bronchitis and pleurisy. She died of tuberculous bronchopneumonia, May 26, 1915.

She was of the usual Mongolian type with the characteristic tissue and developmental changes. In Figure 2 we have abridged the enumeration of these characteristics, showing microsomia, very small thyroid and suprarenals, hyperplastic thymus, an interstitial inflammation of the ovaries and hypophysis, a general lymphnoditis, including tonsils and adenoids and dysgenitalism in the form of unequal labia majora, long urogenital cleft, large, prominent clitoris and a high position of the mammae.

Three of the Mongolians showed extreme glandular change; one showed marked involvement, and the fifth one moderate dysadenosis. Thus all five cases of Mongolianism showed gland changes besides the usual typical characteristics.

SUMMARY

In this study, the developmental, tissue and gland changes have been charted in 100 cases of feeblemindedness that came to necropsy, taken in chronological order from the pathologic service of the Department of Mental Diseases of Massachusetts. Data found in the case histories and necropsy protocols were gathered in the regular way without reference to the endocrine point of view. It has been shown that 21 per cent. of cases showed marked glandular involvement, with changes of a lesser degree in 53 per cent. additional, making a total of 74 per cent. in which there were signs of gland change. In eleven of these there were signs of syphilis. Not having Wassermann reactions in all cases, it may be argued that others of the glandular cases may have been syphilitic. Vice versa, some of those designated as syphilitic because of vascular or chronic inflammatory or exudative changes, may not have been syphilitic. Furthermore, the dysfunction of the endocrine system itself may be due in these cases to syphilitic influence on the secreting cells of the glands. In Figure 1, though the hydrocephalus points to a possible syphilitic involvement, the Wassermann reaction was negative.

The pituitary has been found invaded more often than any other gland. The small stature so common in the feebleminded may be correlated with this fact, in view of the powerful influence of the pituitary gland on growth.[7]

The gonads were shown to be affected in 38 per cent. of cases. Also anomalous development was most rampant here. This is not remarkable when the embryology of the genital tract is considered. The similar, not to say identical, development of the urogenital tract in both sexes up to a certain embryologic stage, and then the more or less arbitrary determination for male or female would seem to give much more opportunity for anomalies, misdevelopments and malformations than in other parts of the organism where the developmental homonomy is not interrupted.

Macroscopic studies of the brain anatomy have shown numerous reversive types and evidences of arrested development or maldevelopment. Microcephaly, especially in the Mongolians, was common. Macrogyria, in one instance almost to absence of any fissuring in the frontal regions of the two hemispheres, was of frequent occurrence. Extraneous fissuring, "affenspalte" lateral inequality, microcerebellum correlated with sprawling gait, and deficiency of parietal and occipital lobes with various degrees of exposure of the cerebellum, were some of the more striking changes found in the encephalon.

MICROSCOPIC EXAMINATION

Among the microscopic findings, interstitial change, aplasia, pigmentation and varied staining reactions were noted. The pituitary was frequently found cystic; especially dilatation of the cleft in the pars intermedia. The cells of the anterior lobe showed varied staining reaction, the most common change being a deficiency of basophil cells. In the posterior lobes, marked pigmentation occurred in several instances in very young individuals.

The aplastic condition of the thyroid was present in the cretins. A hyperplasia of the glandular epithelium was noted in several cases, and increased interstitial elements were also common. In one of the Mongolians an infantile condition of the thyroid with absence of colloid was noted. In a few cases the vesicles were distended with colloid.

The tests usually showed signs of activity in all except the lower grades. The idiots' testes were either inactive and fibrous, or only feeble signs of spermatogenesis were found. The ovary was examined in only a few cases, but seemed less virile than the male gonads. Two cases of imbecility showed no ovarian activity, and in a third case only very slight evidence of function, one graafian follicle in a section, was found.

No characteristic changes were found in the suprarenal gland. In one case—a tuberculous subject—there was considerable involvement of both suprarenals with tubercles, numerous giant cells, etc. There were no signs of Addison's disease present.

CONCLUSIONS

1. The evidence of gland changes observed in these cases by routine examination methods, clinical and postmortem, without particular reference to endocrinology, is so constant and multifarious that we cannot but regard them most seriously. There were gland changes of one sort or another in 74 per cent. of cases. Marked gland changes occurred in 21 per cent.

2. With the constant and characteristic bony and soft tissue changes microsomia, lowered resistance to infection, poor circulation, loose jointedness, and changes in the glands of internal secretion, Mongolian idiocy bids fair to be founded on an endocrine pathology.

3. The internal secretions begin to exert their influence early in the life of the organism. It is known that permanent adjustments of the other glands and tissues follow on the absence or dysfunction of one gland or set of glands. In order to avoid such permanent changes as infantilism, dwarfism, acromegaly, microcephaly and feeblemindedness, it is imperative that these conditions be recognized and remedied by supplying the deficient hormone or inhibiting the hyperfunction of a gland early in the course of the disease. After permanent adjustments have formed, improvement is difficult; with early treatment, results are often little short of marvelous.

4. Much of the finer pathology of the ductless glands is concerned with biochemical reactions. Further studies of feeblemindedness by physiochemical and roentgenologic research would no doubt throw more light on this obscure field.

ABSTRACT OF DISCUSSION

DR. TOM A. WILLIAMS, Washington, D. C.: In the attempt to establish a correlation between endocrine deficiency and poor cerebral development we must avoid the danger of the *post hoc, propter hoc* argument. Dr. Raeder's theory may be tenable, but two objections occur to me.

First, in relation to syphilis. Syphilis affects all structures of the body and the feeblemindedness in congenital syphilitics may be primarily cerebral. Therefore, in estimating a statistic it is perhaps fair to eliminate the cases of syphilis. Secondly, we should have a control, namely: postmortem examination of the bodies of a large number of dead persons. Why say that in 100 necropsies certain evidences were found which tend to establish a correlation between endocrine deficiency and feeblemindedness, when these findings may be the effect of the disease which has terminated in death? These cases must be eliminated. In regard to the microsomia of these patients, is it necessary that it be attributed to hypoendocrinia? Perhaps not. Anomalies of growth are the result of endocrine disturbances; but is the growth of the individual who grows without anomalies dependent entirely on endocrine factors? It is doubtful whether we can include microsomia as one of the effects of endocrine disturbances.

DR. GUSTAVE ROUSSY, Paris, France: (Translation by Dr. Hitchcock): We must be cautious in our conclusions regarding the rôle of the endocrine glands, not too hastily deciding as to the absolute relations of cause and effect in regard to polyglandular syndromes. Indeed, if one examines systematically the endocrine glands at necropsy on subjects dead of the most diverse affections, as I have done in more than 200 cases, there will be found lesions of several internal glands not usually occurring in this type of patient. Besides the endocrines proper, other tissues are concerned. In a case of Parkinson's disease I found lesions of the parathyroids. The causes of lesions of the endocrine glands, as shown at necropsy, are numerous, complex and inconstant, therefore it is prudent not to be hasty or final in drawing conclusions concerning these lesions.

DR. WALTER TIMME, New York: The main difficulty with regard to all internal glandular disturbances is that we do not have a definite static series of organs. The endocrine glands are all of a character designated in mathematics as variables; there are no constants. In order to solve an equation or series of equations which involves variables you must have one more equation than you have variables. Here we have from ten to fifteen variables and only one equation. Hence, we cannot solve the problem. We can only approximate to a solution. If Professor Roussy has examined at necropsy 300 cases of various diseases in which the endocrine glands were found to be involved, then these disturbances are part of the process of the disease. They may have been produced by the disease and they may have indicated the lethal termination. In other words, they are terminal states. But when Professor Roussy states that the presence of such lesions in the feebleminded is nonconclusive as to the pathogenesis of feeblemindedness, I can only ask, Do they not suggest a possible cause? Their absence would beyond peradventure be regarded as conclusive! Dr. Raeder claims that in 100 cases of necropsy on the feebleminded he has seen a large proportion that showed definite changes in the internal glandular system. He has approached the subject in a different way than it has ever been approached before, and he has arrived at a definite, high percentage of disturbance in the endocrine glands. His work presents a distinct advance, a new angle of attack in this problem that hitherto has been attacked entirely on the psychogenic side with practically

little result. If these disturbances of the internal secretory organs produce idiocy, why does not every disturbance of the internal glands produce idiocy? For this reason: It depends on how the glands are constellated. There are certain constellations of these glands which will produce a condition of diabetes, another which will produce giantism, a third acromegaly, a fourth Addison's disease, etc. It depends on the subject's reaction to these disturbances as to which disease will develop. I tried to bring this out in a table of endocrinopathic inheritance some years ago. I examined every member of a family through four generations. The original parents were a giant and a diabetic. Through four generations there were all kinds of endocrine disturbances varying from exophthalmic goiter to microsomia, and including two morons. Heretofore in investigating ancestry all we looked for was mental disease. That is wrong; mental disease is only one phase of a disturbance, just as is epilepsy.

Dr. M. A. Bliss, St. Louis: It is only by such extensive studies as this, made under opportunities that come only to those who work in institutions of that size, that we shall be able eventually to arrive at some conclusions in regard to these things. Dr. Raeder has made a definite advance toward, perhaps, finally reaching some conclusions about the association of the endocrine glands with these mental deficiencies and disturbances.

Dr. Andrew L. Skoog, Kansas City, Mo.: The brain specimens presented by Dr. Raeder are suggestive of hereditary disturbance or secondary anomaly of the brain developing at some early stage. Those who have studied the cases of various types of idiocy will agree that the patients reach full development at an earlier age than does the average individual, and probably more so as related to the central nervous system.

Dr. Karl A. Menninger, Topeka, Kan.: Work like this furthers the study of the interrelationships of physical and mental disease. We have too long regarded the patient as carrying his brains in one basket and his visceral organs in another, and from our standpoint we have looked only at one basket. Endocrinologists deserve praise for calling attention to their field of the human organism. We have ignored a relationship which is far closer than we know at present, far more intimate and intricate, perhaps, than we even suspect.

Dr. Oscar J. Raeder, Boston: Syphilis is to be considered in all cases of feeblemindedness. Fifteen per cent. of our 100 cases were syphilitic; only two of the twenty-one endocrine cases were suspiciously syphilitic, but we had no Wassermann in these cases. Some of these cases date back as far as eight or nine years, before the Wassermann test was so regularly done as now. In necropsies on the insane and the feebleminded we frequently find gland changes and many of them are terminal changes. I would not assign that as a cause of feeblemindedness if the patient had been feebleminded. Such lesions frequently are found in necropsies, especially in senile cases. Dr Timme regards feeblemindedness as one manifestation only in an endocrinologic heredity. In every biologic study the relation of the endocrinologic factors to growth and development is very important, as has been shown in experimental work on the frog. The frog fed with thymus gland was overgrown but underdeveloped, while the frog fed with thyroid gland was overdeveloped but undersized. That point was brought out by Dr. Timme in his example of four generations of one family in which there were two morons, some acromegalics, some giants, while some showed other gland changes. I make no claim that endocrinologic factors are the cause of all feeblemindedness. I simply call attention to the marked gland changes found in all cases of feeblemindedness. I would be glad to find one definite glandular syndrome as the cause of one definite feeblemindedness. There are many feeblemindednesses, such as syphilitic, glandular, traumatic, etc. Dr. Menninger and Dr. Skoog emphasized the fact that in the past the nervous system has been studied separately from the rest of the body. We have not sufficiently considered the body as related to the central nervous system. As Dr. Southard used to say, we look at the neurons, but the body is connected up not only by neurons, but also by hormones, and these must be considered together.

THE SURGICAL TREATMENT OF BRAIN ABSCESS*

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A brain abscess may pass through three distinct phases, the initiatory, the quiescent, and the terminal.[1] It should be operated on in the quiescent stage, not in the initiatory or terminal, as is frequently done.

During the initiatory stage the patient is more likely to present symptoms of diffuse encephalitis and meningitis than of localized tissue destruction. In many instances the disease passes into the quiescent stage with little trouble except for symptoms of intracranial pressure, which are difficult to distinguish from those produced by brain tumor, or it may be interrupted by death in a comparatively short time.

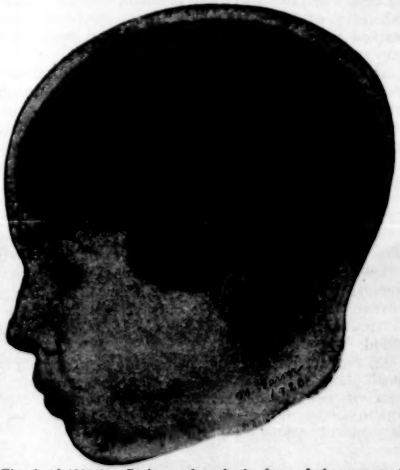


Fig. 1 (A 192143).—Drainage through the base of the osteoplastic flap of a large subcortical abscess of the left frontal lobe containing 6 ounces of pus. The abscess developed subsequent to an acute otitis media.

During the quiescent stage, the abscess usually presents a thickened capsule and the inflammation occasionally quiets down permanently. But if the lesion is not operated on, a secondary infection usually develops which stirs up the old process, produces acute encephalitis, and causes death.

Holmes[2] found that brain abscess is more likely to occur during the second and third decades of life than during the first, and that solitary tubercles are more common than abscesses in children under 5 years of age.

Gowers,[3] in a study of 223 cases of brain abscess, found that 10.7 per cent. occurred in patients less than

*From the Section of Neurologic Surgery, Mayo Clinic.
* Read before the Section on Surgery, General and Abdominal, at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. Macewen, W.: Pyogenic Infective Diseases of the Brain and Spinal Cord, New York, the Macmillan Company, 1893, 354 pp.
2. Holmes, J. B.: Multiple Abscesses of the Brain in Infancy, Arch. Int. Med. 17: 591-606 (May) 1916.
3. Gowers, quoted by Holmes (Footnote 2).

10 years of age, and Okada,[4] in a collection of 141 cases, found that 11.6 per cent. occurred during the first decade, and 37.3 per cent. and 30.8 per cent. during the second and third decades of life, respectively. He also showed that the frequency of cerebellar abscess during the first decade of life was one half that of cerebral abscess. Heimann,[5] in a study of 535 cases of brain abscess of otitic origin, stated that he found only three (1 per cent.) in children under 5 years of age.

The principal causes of pyogenic abscess are middle ear disease, frontal sinusitis, and trauma. The abscess produced is single, and situated in the temporosphenoidal or frontal lobes, or at the point of the injury to the skull. A rather small percentage is situated in the cerebellum. Heimann reports a series of 570 cases of brain abscess of otitic origin, in which 457 were due to chronic otitis media and 113 to acute otitis media; this is significant evidence that brain abscess is prone to occur in chronic suppurative conditions, a theory which is borne out not only in cases of chronic otitis media and frontal sinusitis, but also in cases of empyema, osteomyelitis and general septicopyemia.

A brain abscess may arise from an infected area and extend into the brain by contiguity, or it may develop at a distance from its etiologic factor and be a part of a hemotogenous or lymphatic infection. Frontal lobe abscess following frontal sinusitis with osteomyelitis, and temporosphenoidal abscess following otitis media, are illustrations of infection by contiguity. On account of the good blood supply to the cortex, however, and the diminished circulation in the white substance, an abscess usually develops subcortically and extends toward the middle of the brain.

During the initiatory stage, the process is more likely to be encephalitis or meningitis than cell destruction and pus formation; therefore very little can be accomplished by surgical intervention, as the encephalitis frequently continues and produces death. If the process becomes circumscribed and a true abscess forms, the encephalitis generally subsides, since the capsule becomes thickened and acts as a protection against the absorption of toxic materials. The brain abscess then produces symptoms of intracranial pressure and localization similar to those produced by tumor in the brain. The symptoms, such as delirium, coma, stertorous breathing, meningismus, dilated pupils, rapid pulse and paralysis, which are usually considered diagnostic of brain abscess, are symptoms manifested in the terminal stage, indicative of abscess with diffuse encephalitis, which rarely can be checked by surgical treatment.

REVIEW OF TWENTY-SIX CASES

This study is a review of twenty-six cases of brain abscess examined at the Mayo Clinic during the last five years; the diagnosis in twenty-three instances was verified either by operation or by necropsy. For the purpose of detailed study the twenty-six cases are divided into two groups, nonsurgical and surgical cases.

Nonsurgical Cases.—Of the seventeen patients who were not operated on, seven died shortly after admission or during the time of observation. Seven had been operated on previously for chronic empyema or lung abscess, or they presented symptoms of bronchiectasis or chronic tuberculosis; five of the seven died; necropsies were performed on four; one patient died at home. Two patients recovered (the latter are necessarily uncertified cases). Three patients died following a radical mastoid operation for chronic otitis media with subdural abscess. They belonged to a group of thirty-six cases in which the radical mastoid operation was done for chronic otitis media associated with some form of subdural abscess.

Surgical Cases.—Nine of the twenty-six patients were operated on for brain abscess; five recovered, and four died shortly after the operation. Of the five patients who recovered, four are now living; one died two years following operation; the cause of death was not reported to us.

Etiology.—Five of the twenty-six cases were traceable to chronic otitis media with acute exacerbation, six to frontal sinusitis, two to frontal sinusitis with

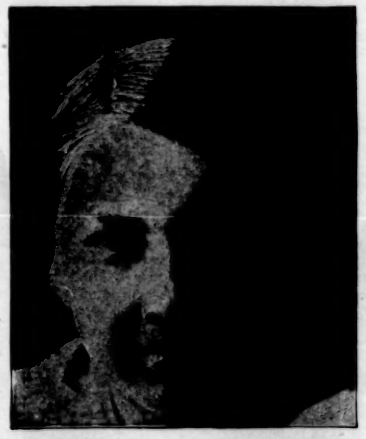


Fig. 2 (A 192143).—Patient three years after operation illustrated in Figure 1. Recovery was complete.

osteomyelitis, four to injury of the skull, five to chronic empyema, one to chronic empyema with septicopyemia, one to old pulmonary tuberculosis, one to lung abscess, and one to bronchiectasis.

Location of Abscess.—The abscess was located in the frontal lobe in fourteen patients (three uncertified); one patient died after dismissal from the clinic, and two slowly recovered without operative treatment. In four patients the abscess was situated in the temporal lobe, in two in the temporosphenoidal lobe, in one in the occipital lobe, in two in the cerebellar lobe, in one in the midbrain, in one under the temporal lobe, and in one on the cortex, associated with encephalitis.

Symptoms.—Thirteen patients complained of headache, ten of nausea or projectile vomiting, four of blindness, twelve of jacksonian epilepsy, four of grand mal epilepsy, fourteen of paralysis, sixteen of hebetude or coma, two of injury to the skull, nine of meningeal irritation, and ten of fever.

Clinical Findings.—The urinalysis was negative for all but four patients; these showed symptoms of acute

4. Okada, W.: Diagnose und Chirurgie des otogenen Kleinhirnabszesses, Klin. Vortr. a. d. Geb. d. Otol. **10**: 313-450, 1900.
5. Heimann, T.: Ein Fall von akutem, otitischen Schlafenlappenabszess (induziert durch Otitis media suppurativa acuta artificialis; Einiges zur Statistik der otitischen Hirnabszesse), Arch. f. Ohrenh. **67**: 1, 1905-1906.

nephritis. The average white cell count for the entire group was 16,000; in a few instances the leukocytosis was normal. Since the diagnosis was uncertain during

Fig. 3 (A 206923).—Drainage of an abscess of the left frontal lobe through a skull defect caused by a kick from a horse. The frontal bone was crushed, and infected spicules of bone were driven into the brain substance.

examination, except for the increased intracranial pressure, the spinal puncture was not done in all cases. Whenever the abscess was not associated with diffuse encephalitis or meningitis, the cell count was normal:

Fig. 4 (A 206923).—Three months after operation (Fig. 3); recovery was complete except for a cerebral hernia which has now receded.

from two to five lymphocytes to each cubic millimeter. In cases of meningitis with brain abscess, the spinal fluid was cloudy and contained as many as 108,000 leukocytes and lymphocytes to each cubic millimeter. Spinal fluid and blood Wassermann tests were positive in two of the twenty-six cases; this is interesting in that neither of these two patients had any corroborative symptoms of syphilis. Choked disks, ranging from 1 to 7 diopters, were present in nine cases. One patient with a fifteen months' history of brain abscess following a frontal sinusitis had a secondary atrophy with total blindness. Local tenderness was present in twelve cases; in four it was not over the abscess, but a confirmatory symptom in eight of this group. Partial or complete paralysis was present in fourteen cases. Fifteen of the twenty-six cases presented symptoms of mental disturbance, such as lack of attention and cooperation, loss of memory, delirium and coma.

A résumé of the findings reveals urinalysis usually negative, a slight leukocytosis, and if the abscess is unattended with meningitis or cortical encephalitis, a negative spinal puncture. One third of the patients

Fig. 5 (A 270162).—Drainage of a subcortical abscess of the right frontal lobe through a small decompression at the angle of the wound. The abscess, which developed subsequent to a frontal sinusitis, was of fifteen months' duration and contained sterile pus. Patient recovered except for secondary atrophy.

studied had choked disks, ranging from 1 to 7 diopters, one third had local tenderness over the abscess, and one half had a motor or mental impairment.

The duration of the symptoms varied from three days to three years, and each case followed one of three distinct courses. Sixteen patients had an average duration of symptoms of thirty-two days; four of these were operated on for brain abscess and promptly died. The five who recovered following a drainage of the abscess had an average duration of symptoms of six months. Five patients had an average duration of twenty-seven months, two slowly recovered, and three died; two developed secondary infection and encephalitis, and one received an injury which ruptured an old abscess into the ventricle.

The sixteen patients were in the initiatory stage which did not pass into the quiescent stage. Those who were operated on and recovered were treated in the quiescent stage when the immunity was the highest.

The last five patients fall into the terminal group in which an occasional patient recovers without operation, but the chances are greater that a secondary infection and death will occur.

REVIEW OF SURGICAL CASES

Six of the nine patients operated on were explored through an osteoplastic flap, two through a skull defect, the abscess being within close proximity to the site of the injury, and one through a subtemporal decompression, which was not located because of insufficient exposure.

A brain cannula was used to locate the abscess; the pus and broken down brain material were removed by suction, the cavity irrigated with saline solution and then packed loosely about the tube drains with iodoform gauze; in one case, tubes without gauze were used. In all but one case the pus was very thick and

Fig. 6 (A 112525).—Drainage of an abscess of the right frontal lobe through a skull defect which was the result of an osteomyelitis following frontal sinusitis.

ropey and contained pathogenic organisms; in the one the pus was sterile; this patient gave a fifteen months' history of trouble.

RESULTS IN TWENTY-SIX CASES OF BRAIN ABSCESS

Patients		Patients	
Operated on (35 per cent. of 26)	9	Not operated on (65 per cent. of 26)	17
Died (45 per cent. of 9)	4	Died (89 per cent. of 17)	15
Cured (33.3 per cent. of 9)	3	Cured (5.8 per cent. of 17)	1
Improved (22.2 per cent. of 9) (with epilepsy)	2	Improved (5.8 per cent. of 17) (with epilepsy and slight motor impairment)	1

The convalescent course of the patients, save one, who recovered following the operation, was uneventful. This patient developed a local meningitis, osteomyelitis, and infection in the wound; a considerable portion of the skin was destroyed, exposing an area of the bone flap 6 by 9 cm. This patient presented a very interesting and rather singular picture in that we were experiencing considerable difficulty in stimulating granulation

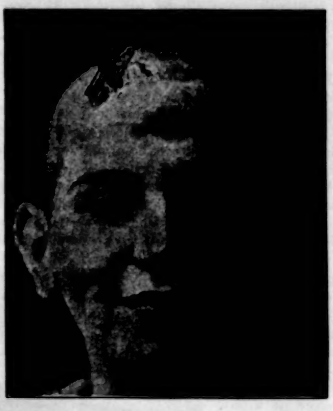


Fig. 7 (A 112525).—Patient ten days after drainage of the frontal lobe. Abscess (Fig. 6) with the drains in place.

over the denuded area, when, accidentally, the patient bumped her head and fractured the outer table of the exposed bone, on removal of which the wound healed rapidly, and skin-grafting was unnecessary. The principle of this healing is of value in the treatment of exposed areas of the skull in cases of gummatous osteitis, and in denuded areas following traumatic loss of scalp. If the sequestrum or outer table is removed, the wound granulates quickly and usually heals without skin-grafting.

Fig. 8 (A 112525).—Patient had an uneventful convalescence.

Another striking feature following drainage of a brain abscess is the rapidity and entirety of mental and motor restoration. This may be explained by the fact

that the abscess usually develops within the white substance of the brain with a tendency to expand the part involved rather than produce actual destruction of brain substance, and on drainage of the abscess the cavity collapses, the edema subsides, the circulation improves, and the function returns.

CONCLUSIONS

1. The four principal etiologic factors in the formation of abscess of the brain are otitic infection, frontal sinusitis, injury to the skull, and hematogenous infection. Brain abscess is usually single, except when it is of hematogenous origin associated with a general pyemia, and then frequently it is multiple.

2. A brain abscess in its course may pass through the initiatory, the quiescent, and the terminal phase. The different phases can be determined more definitely from the history and duration of the complaint than from the physical findings.

3. If the abscess has developed by contiguity, it should be explored through the area of infection; but if the abscess is remote from the source of infection, it should be explored and drained through an osteoplastic flap craniotomy.

4. Surgical treatment is of little value in the initiatory or terminal stages, or in the presence of meningitis, but it is of great benefit during the quiescent stage. If there is doubt as to the differential diagnosis of brain tumor and brain abscess in the quiescent stage, it is advisable to explore rather than to perform a decompression operation for intracranial pressure or to wait for terminal symptoms.

Fig. 1.—Position of the foot to be gained before one may feel assured that sufficient correction has been obtained; also a simple and efficient method of maintaining correction by the use of adhesive strips.

Sugar Consumption in Relation to Health.—Any etiologic connection between the increase of sweet eating in this country and the large number of physical defects and functional disorders, a realization of which has come to us through a more thorough examination of schoolchildren and young men, can be only problematic, writes F. Van Der Bogert (*Albany M. Ann.*, June, 1920). We know only that these defects exist at a time when general errors in diet are exceedingly common and the natural inference is that some causal relationship exists. As suggested by Leonard Williams, "inasmuch as food is agreeable it is safe to assume that such dietetic errors as are habitually committed arise from excess rather than deficiency of its consumption." Sugar, as the most pleasant, must be considered the most dangerous. Dietetic errors certainly have their effect in the production of gastro-intestinal disorders so prevalent in children, and many of the functional nervous disorders of childhood can be directly traced to toxemia of intestinal origin. The most frequent dietetic errors in childhood are carbohydrate excesses and sweets are in great part the determining factor in carbohydrate excess.

CORRECTION OF CONGENITAL CLUBFOOT IN INFANTS

ISADORE ZADEK, M.D.
NEW YORK

The most satisfactory age at which to begin treatment of congenital clubfoot (equinovarus) is at the age of 2 weeks. This delay adds no material difficulty to the correction, and the treatment is well advanced when the child is old enough to walk, so that only proper supervision is necessary beyond this stage, in the majority of cases. In the treatment of congenital clubfoot one should strive not only for correction of deformity, but also for obtaining a relatively normal amount of motion, which can be obtained only by considerable overcorrection of the deformity and maintenance of this attitude for many weeks. One must remember that the term "clubfoot" conveys no adequate conception as to the difficulty or ease of correction. Correction may be quite simple or extremely difficult, and one can judge of this when the foot is first examined — noting its pliability or resistance to correction. As to shape, there are two distinct types: the long foot of relatively normal size, and the short, thick, pudgy foot with broadening particularly in the fore part of the foot. With the latter type, one always anticipates trouble. There is one feature of clubfoot not usually appreciated, namely, that whereas in almost all clubfeet, if proper treatment is instituted early, the deformity may be completely overcome manually and a relatively normal amount of motion in the ankle preserved in the majority of cases. These feet do not develop in size as normal feet do, even when their correction has been simple and done early. This is evident in the unilateral clubfoot cases in which there is a normal member for comparison; there is lack of muscular development of the entire extremity —which is usually of no practical significance, however.

The procedure for correction is to overcome the varus completely before attempting any correction of the equinus, because the normal relationship of the astragalus must be restored before beginning dorsal flexion.

This stage of treatment is best conducted by the use of plaster of Paris, changing it at intervals of one or two weeks, a simple method of application being the following: Small strips of cotton are placed between the toes and a flannel bandage applied over

this, beginning at the toes, making every turn in the direction of desired correction with this bandage as well as the plaster bandage. The toes are first covered with a half dozen turns of the plaster bandage; then as much of the varus as desired is corrected, and the application is continued up to the top of the calf of the leg, with an assistant steadying the bent knee.

Fig. 2.—Method of application of plaster of Paris for right foot. Flannel bandage has been applied from toes to top of calf, and half a dozen turns of plaster have been applied, encircling toes and front of foot—front of foot held in left hand, plaster being applied with right.

On the right side, the fore foot caught in the left hand between the thumb on the dorsum and the other fingers around the sole is held in the desired position and the plaster bandage applied with the right hand; on the left side the opposite hands are used, the bandage being applied with the left hand. In some of these cases there is a tendency for the child to kick the plaster off, which may be avoided by applying an adhesive strip on each side of the leg and incorporating it in the plaster.

After the equinus is overcome, the correction is best maintained by adhesive strips applied across the foot in the metatarsal region and then across the leg as a stirrup first encircling the fore foot. It is a good plan to apply a couple of thicknesses of adhesive plaster underneath the strips at the base of the great toe to prevent the edge of the adhesive strips cutting into the skin.

Correction should be continued until the dorsum of the foot is against the lower part of the leg, and this position maintained for from six to eight weeks, when it may be discontinued ordinarily. When this full correction is obtained, deep wrinkles appear in the skin on the outer border of the foot, which will trouble the mother unless she has been forewarned. These later disappear. After the adhesive plaster is discontinued, the mother is instructed to put the foot through the full range of motion opposite the original deformity frequently in the course of the day. For the average case no splint is necessary. The hands of an intelligent parent are more efficient in preventing deformity when the patient is under proper supervision. For special cases, retention splints may be necessary. When the child begins to walk, it is usually desirable to raise the outer border of the shoe one-fourth inch.

After adequate effort, one finds cases in which the equinus cannot be overcome manually after division of the Achilles tendon. This is due to short posterior ligaments and not to shortened ligaments, as some believe. For these cases it is necessary to cut the posterior ligaments, which may be done subcutaneously.[1] We have done a considerable number of these with saisfactory results. After sectioning the ligaments, the foot is encased in plaster of Paris in an attitude of calcaneovalgus, and we then treat the foot as though it had been corrected manually, the same after-treatment being essential.

This technic has been almost entirely evolved through the efforts of Dr. E. L. Barnett of this city, whom I wish to thank.

CONCLUSIONS

1. Treatment of congenital clubfoot should be begun early.

2. Treatment should be continued until the dorsum of the foot rests easily against the lower end of the leg, and this position maintained for about two months, if there is no tendency to recurrence, as in the average case.

3. In the usual run of cases no brace is indicated. Too much reliance is placed in the use of clubfoot braces. The conventional brace is only retentive and not corrective.

4. Frequent daily manipulations, opposite the original deformity, are essential until the correction is assured.

Fig. 3.—Method of application for the right foot. Foot held in right hand, plaster being applied with the left.

5. Many so-called relapses in congenital clubfoot, treated early, are due not so much to the tendency for deformity to recur as to the lack of sufficient treatment.

885 Park Avenue.

1. Zadek, Isadore, and Barnett, E. L.: The Importance of the Ligaments of the Ankle in Correction of Congenital Clubfoot, J. A. M. A. 69:1057 (Sept. 29) 1917.

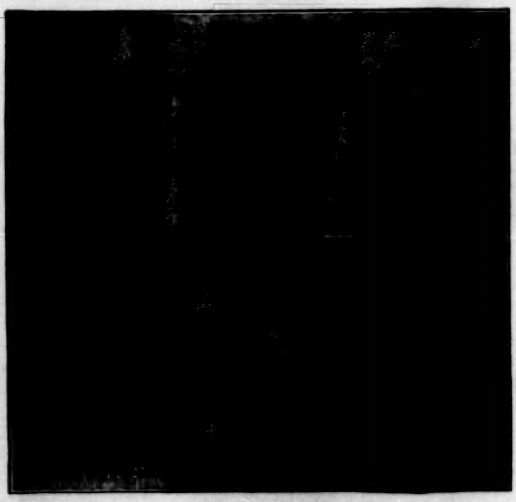
Clinical Notes, Suggestions, and New Instruments

STEREOSCOPIC CABINETS FOR DEMONSTRATION OF ANATOMIC AND PATHOLOGIC PREPARATIONS

ALEXANDER GIBSON, M.A., M.B., CH.B., F.R.C.S. (ENG.), F.R.S.E., WINNIPEG, MAN.

The value of stereoscopic pictures of anatomic preparations has been recognized for some years. Waterston published, in 1906, the Edinburgh Stereoscopic Atlas of Anatomy, consisting of about 250 views. Shortly afterward there was published a series of fifty views illustrative of the science of obstetrics. Within the last few months there has been published in the United States a stereoscopic work consisting of views of operations as performed by well known exponents.

Primarily to meet the needs of a large class of students of anatomy, the apparatus described herewith was designed. The idea, however, is one which is capable of being applied indefinitely, and individual teachers who may possess some special anatomic dissection, some unusual pathologic preparation or some point in operative technic which they regard as an advantage can easily make use of this apparatus. There is nothing novel in the idea, except, I believe, its application to class teaching in the faculty of medicine.



Stereoscopic cabinet: *A*, viewed from front; *B*, framework, showing views mounted on endless chain; *C*, lid removed to show lighting arrangements; *D*, viewed from rear to show portion removed for demonstration of transparencies; *a*, cards with description of views; *b*, face-piece with stereoscopic lenses; *c*, handle for turning views; *d*, plug to fit any socket; *e*, electric bulb for illumination; *f*, cards, each in a metal carrier; *g*, wooden framework; *h*, section removed.

When an atlas consisting of a collection of photographs is placed in a class room, there is always a strong probability that one or more cards will go amiss; they may be lost or be abstracted. Further, it is impossible to be certain that the student will replace them in their logical sequence, and time may be wasted in rearranging them. These disadvantages are overcome by the use of a demonstration cabinet.

The views are mounted in sets of fifty on an endless chain. The framework carrying this chain fits into a cabinet, in one face of which is fitted an adjustable face-piece carrying a pair of stereoscopic lenses. The chain is turned by handles affixed to a shaft, which is square on section. Within the cabinet, above the level of the top of the framework, there is a long, narrow, electric globe. By means of reflected light the views are available for study independently of daylight.

A modification of the cabinet can be made whereby stereoscopic transparencies can be demonstrated equally well. A portion of the side of the cabinet, opposite to the face-piece, is removed, the lid is applied, and the transparencies are looked at by transmitted light.

The apparatus was made for me locally. Since its installation in the anatomy department of the University of Manitoba, it has been much appreciated by the students.

661 Broadway.

A SIMPLE DEVICE FOR MEASURING BASAL METABOLISM

PRELIMINARY REPORT *

HOBBY M. JONES, PH.D., CHICAGO

The linear formula of Du Bois[1] has made possible very accurate measurement of the basal metabolism of human subjects by what is known as indirect respiration calorimetry.

Specially constructed and equipped respiration chambers for measuring the direct heat output are not demanded for diagnostic purposes. Briefly, all that is required is: (1) measurement of the patient's rate of oxygen absorption per hour; (2) assumption of an average respiratory quotient of 0.82, so as to assign to the oxygen a definite caloric value per liter; (3) calculation of the subject's body area by the linear formula, and (4) from this data calculation of the patient's caloric output per hour per square meter of body area.

Formerly, the only device available to clinicians taking advantage of these simple procedures was the apparatus described by Benedict.[2] The features of the method as carried out by the Benedict apparatus, which obviously limit its wider usefulness, are noteworthy:

1. Although usually known as the "Benedict portable," the fragility of the spirometer bell and necessity for water contained in the apparatus, to say nothing of its shape and weight, limit its portability almost hopelessly, so far as carrying the test to the patient is concerned.

2. Gas-volume changes from standard barometric to room-barometric pressures, and from 0 C. to the various changes in temperature in the spirometer bell, occurring as the test proceeds, form only a part of the corrections necessary to the calculations involved in the method. Slide-rule, logarithms and considerable time are virtually indispensable to the mathematics of the method before the results of the test are known, even after the operator has mastered a knowledge of the mathematical routine.

3. An electrical connection for the motor used for circulating the enclosed air is absolutely essential for carrying out the test.

The practical accuracy of the apparatus is unquestioned, however, when the soda lime is absorbing properly and no leakage of the contained air occurs.

The apparatus illustrated in Figure 1, which will be described in detail in a subsequent paper, was designed with the hope of extending the great clinical usefulness of basal metabolism measurements. Its simplicity in operation, from the technical manipulations to the final calculations, is a feature which it is hoped will increase its usefulness. Its portability, however, is its chief recommendation. It can be

* From the Department of Pathology, University of Illinois College of Medicine.

1. Du Bois, Delafield, and Du Bois, E. F.: Clinical Calorimetry, Fifth Paper, The Measurement of the Surface Area of Man, Arch. Int. Med. 15:868 (May) 1915. Sawyer, Margaret; Stone, R. H., and Du Bois, E. F.: Id., Ninth Paper, Further Measurements of the Surface Area of Adults and Children, ibid. 17:855 (June) 1916. Du Bois, Delafield, and Du Bois, E. F.: Id., Ten Paper, A Formula to Estimate the Approximate Surface Area if Height and Weight Be Known, ibid. 17:863 (June) 1916.

2. Benedict, F. G.: Boston M. & S. J. 178:667-678 (May 16) 1918.

dismounted and put away in a carrying case slightly larger than a microscope case. The case, the apparatus and the oxygen cylinder in all weigh 21 pounds. The apparatus can be carried in any position, over rough roads, without fear of disturbing its parts or contents, and can be assembled or taken down in about one minute. It requires no electrical or other special connection for operation. The final result of the mathematics of the test is obtained directly, i. e., without any calculation, from a table attached to the apparatus. The measurement of the gas volume is independent of temperature and pressure.

TABLE 1.—TYPICAL READINGS ON SEVEN SUBJECTS *

Subject	Age	Sex†	Basal Rate in Calories per Square Meter per Hour
S. T.	25	♀	36.5
W.	26	♀	37.0
J. J. T.	32	♂	39.6
L. P. G.	24	♂	39.2
F. G.	22	♀	37.5
M. W.	16	♀	41.0
S. P.	13	♂	44.0

* These results should be compared with the values given in the table by Aub and Du Bois.
† In this column, ♂ indicates male and ♀ female.

TABLE 2.—METABOLIC RATES OF EIGHT PATIENTS *

Patient	Age	Sex	Percentage above Basal Rate. Per Cent.
C. C. H.	35	♂	+ 112
H. P.	47	♀	+ 87
P. P.	28	♀	+ 51
P. C.	28	♂	+ 35
W. S.	52	♀	+ 63
M. W.	16	♀	0.0
A. H.	44	♀	+ 26
M. P.	38	♀	+ 22

* The rates given are those of individuals suffering from hyperthyroidism of varying degrees of severity. All of them had been diagnosed as such by Dr. Charles S. Williamson before being tested. The results show the same ranges of variation reported by others in many cases of this disease.

For limited space the great advantages of making triplicate readings, of shortening the time to three or four minute tests, a discussion of certain trivial sources of error, etc., will be reserved for a later paper. Already I have been criticized by clinicians for undue attention to small sources of error. Certain it is that, at least for clinical purposes, consideration of ± 2 per cent. total error is not of practical value.[3]

For illustrative purposes, Table 1 shows typical readings on a few of the many normal subjects who have been tested by this apparatus.

Table 2 is a record of the metabolic rates of eight subjects, five of whom had been diagnosed previously by Dr. Williamson as frank cases of hyperthyroidism. One of the other three, a young girl at the age of puberty, who had been suspected as a beginning case of hyperthyroidism, proved to have a rate of 41, which is normal for girls at 16 years, according to the table of Aub and Du Bois. From clinical manifestations the other two patients were borderline or suspected cases, a fact which is also well shown in their metabolic rates.

Fig. 1. — Appearance of apparatus used for indirect respiration calorimetry; height, 37 inches); weight, including smallest size oxygen cylinder (40 gallons), 18 pounds; carrying case, 13 inches high; weight, about 21 pounds.

A comparison of the results obtained by this device with those obtained by the Benedict apparatus, when used on the same subject under the same conditions, showed a rate of oxygen absorption of 288 and 291 c.c., respectively, per minute. In another test, with a second Benedict apparatus, in which the apparatus described here was operated by one unacquainted with this instrument, but familiar with the Benedict apparatus, data were obtained which, when calculated by another person present at the test, gave rates of 45.0 and 44.1 calories per hour per square meter of body area, respectively, on the same subject.

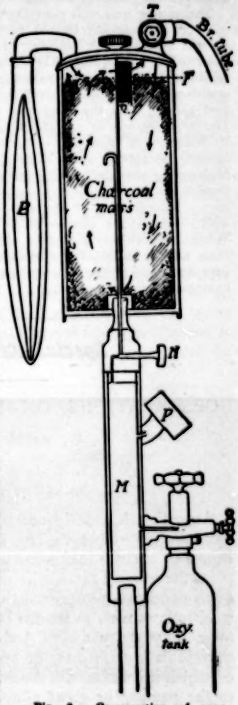


Fig. 2. — Cross-section of apparatus: Arrows indicate direction of movement of inspired and expired air; *Br. tube*, breathing tube; *T*, three-way cock; *F*, flutter valve for directing circulation of gases; *B*, rubber bag to contain measured amount of gas and to allow for expansions and contractions in respiration; *N*, needle valve for releasing the measured amount of oxygen from *M*, the measuring cylinder, into the charcoal-alkali tower above; *P*, pressure gage with room-temperature scale on dial to indicate when 1 liter of dry oxygen at 0 C. and 760 mm. has been released at any given room temperature from the oxygen tank.

SUCCESSFUL USE OF APPARATUS

The apparatus described here has been used over a period of several months in clinical research and in diagnosis. Its portability in a practical sense is demonstrated beyond question. Several duplicates of it have also been distributed and are being used for diagnostic purposes, and for following, from time to time, the effects of therapy, by clinicians and general practitioners, a few of whom, during the last months of its development, have become familiar with the uses and technic of the test. So far, no inherent inaccuracies or technical difficulties have been reported from these sources. In fact, its technical variations, as stated above, have already been shown, by independent and comparative tests, to be well within the limits of individual and physiologic variations, and therefore adequate to the needs of the clinician as an instrument for measuring basal metabolism.

3. The assumption of a respiratory quotient of 0.82 has abundant experimental justification, and apparatus for the determination of the respiratory quotient in each individual case is wholly superfluous, especially in diagnosis or in clinical research.

UNUSUAL SYMPTOMS CAUSED BY CERUMEN IN AUDITORY MEATUS

REPORT OF CASE

JULIUS KAUNITZ, M.D., NEW YORK

Because of unusual symptoms produced by such a trifle as cerumen in the auditory meatus, I have thought it worth while to report this case:

Mrs. W., aged 73, with unimportant family and personal history, suffered from nausea, vomiting, diarrhea, vertigo and weakness of twelve hours' duration, July 17, 1920. These symptoms the daughter ascribed to ptomain poisoning, resulting from some food, of doubtful merit, ingested the day

before. The diarrhea I suspected to be caused by a purgative taken on the previous evening.

The patient was well nourished. The thoracic and abdominal organs and extremities were apparently normal. The patient was lying on her right side. An attempt to turn the head to the left immediately brought on the most distressing giddiness, nausea and weakness. The sitting or standing position could be maintained only with the greatest effort, and always with the head and body inclined to the right. Her walking was of a staggering nature. It was necessary to hold on to objects for support. There was a distinct lateral nystagmus when looking to the left, but not when looking to the right. The patient denied any recent ear trouble, deafness or any unusual sounds or sensations in the ears. Examination of the ears, however, disclosed a thin disk of ear wax a quarter of an inch in front of the drum. When this disk was punctured, there was an immediate relief from all the distressing symptoms. The patient could now turn her head to the left, sit, stand or walk as usual. The nystagmus had disappeared.

Special Article

OBSERVATIONS ON SOUTH AMERICA

IV. ARGENTINA

WILLIAM J. MAYO, M.D.
ROCHESTER, MINN.

Argentina is readily accessible from Chile by the Transandean railway. The frontier is reached at a height of about 3 kilometers above sea level, at which point the railway tunnels its way through 4 kilometers of mountain range underneath the old pass. The railroad follows the Rio Blanco River on the Chilean side by a very sharp ascent and many windings, often uncomfortably close to the edge of the narrow ledge on which it is built. On the Argentine side the descent to the pampas or great alluvial plains which extend from the foot of the Andes approximately 800 miles to the sea is less abrupt, and follows the cañon of the Mendoza River.

At least a third of the nine or ten million people of Argentina live in cities, more than a million and a half in Buenos Aires alone. The country is very fertile, naturally without trees, but eucalyptus, Lombardy poplar and weeping willow trees have been planted freely in certain districts. The land resembles that of the Dakotas, and is farmed in very large tracts or estancias. The land owners have become enormously wealthy. Blooded cattle may be seen in herds of many thousands. Argentina, with its rich lands, situated largely in the temperate zone, will eventually become the United States of South America.

The railroad system in Argentina is excellent; the equipment and management are on the continental plan. Buenos Aires, which of late years has been controlled by the radical party, dominates the country politically. Laws controlling the disposition of property on death, to break up the large estates, have been passed recently. Strikes are initiated with or without reason, and industrial disturbances are constantly occurring. Recurring longshoremen's strikes have seriously interfered with shipping for a long time, and grains, hides, wool, sugar, cotton and many other of the world necessities have accumulated in Argentina during this period. Numerically the Italians are the dominant race. The Spanish, English, French, German and American colonies are relatively small.

Buenos Aires is a beautiful city, the Paris of South America. Its gardens, parks, sidewalk cafés, boulevards, statues and ornate buildings give it a charm that is all its own. There is a public lottery system in Argentina, and the profits are used for charities. Horse racing is the national pastime, and in this sport Argentina leads the world. The Jockey Club is controlled by the government, but is privately managed. The betting is princely; thousands of dollars are lost and won each racing day. Little attempt is made to control the liquor traffic.

The general standing of education in Argentina is high. The primary course is five or six years, depending on the ability of the student, and is compulsory. Argentina has 400 schoolbuildings on the American plan, most of them modern and completely equipped, including lunch rooms, where bread and sterile milk are served the pupils without charge. The second course is six years, but is not compulsory. Modern languages are taught in this course, and the pupils are not considered "educated" until they have acquired at least three, at the present time Spanish, French and English. One unique feature of the university system in Argentina is the method of control. One third of the votes are in the hands of the full professors, one third in the hands of the junior professors and instructors, and the remainder with the students. Strikes by the students are not infrequent, and all classes are suspended until a settlement is reached. It is difficult to obtain an unprejudiced opinion of this innovation in Buenos Aires, but it may at least be said that it is popular with the students. The day we visited La Plata University the medical students were on a strike. Even in the primary schools, strikes are frequent. A recent student strike of pupils under 10 had to be settled on bended knees, the parents furnishing the knees and the shingle.

The chief medical school of Argentina is located at Buenos Aires and is a part of the university. The building is a dignified structure and occupies two city blocks. The school has an enrolment of 5,000 students. The course is seven years; but is so rigid, particularly in theoretical branches, that only about one fourth of the students graduate in this time. Many spend eight, nine or even ten years obtaining their degrees. Approximately two of the seven years, however, are spent on physics and chemistry, studies that are premedical in North America. Public health, dentistry and veterinary medicine are under the direction of the medical school. Premedical courses in anatomy, chemistry and the fundamental branches are also given at the La Plata University, about 40 kilometers from Buenos Aires. The Department of Anatomy at La Plata, under the direction of Dr. Pedro Belou, is unusually good. I was much interested in some researches in human and comparative anatomy of the liver and gallbladder which he had under way. The museum of

natural history of La Plata is said to be the finest in South America, and we spent a half day with the curator, the venerable Professor Quevedo, observing its wonders. The anthropological collection is unique.

Many of the thirty hospitals in Buenos Aires are old, but practically all are in a process of reconstruction along modern lines. The hospitals have high ceilings, large window spacing, verandas and gardens, well suited to the tropics, but they are not screened. Trained nurses, as we understand the term in the North, do not exist in South America. There is only a small middle class from which to draw material for nurses; it is obviously impossible under present conditions to obtain students from the cultured class qualified for such work. However, the general average of education is being raised, and new training schools are being established with American nurses in charge. The records in all the hospitals are extraordinarily good. Few hospitals in America can show records equally well kept.

Almost all the hospitals and charities in Buenos Aires are financed by the Woman's Benevolent Association, which collects and dispenses funds. The municipal authorities are said to be very jealous of this organization; but it is so strong, and the money is so well administered, that no real objection can be filed against it.

The Rivadavia Hospital occupies almost an entire block of land and is divided into medical, surgical, gynecologic and maternity departments. In the museum of the latter are many rare and well preserved specimens, as well as a very complete and well selected teaching collection. In the department for children is a fine infants' clinic.

The new medical hospital is under the direction of Dr. Agote. Its organization and its records are models of excellence. Clinical work and investigation of the most extensive and advanced character is being carried on. Dr. Agote was the originator of the citrate method of blood transfusion and has perfected the technic of the procedure. A detailed description cannot be given of all the important features of this institution, but the American student of internal medicine who arranges to spend a year with Professor Agote will, indeed, be fortunate.

The British Hospital in Buenos Aires has 200 beds. Dr. O'Connor, senior surgeon, well known in the United States by his frequent contributions to American surgical journals, and Dr. Robert Hallahan, are the surgeons in charge. Dr. Hallahan, the junior surgeon, was educated in Ireland about twenty years ago. After coming to Buenos Aires he passed the examination given in Spanish. He is quite American in his methods. Many Americans go to this hospital when they are ill.

One of the most respected of Buenos Aires' notable surgeons is Herrera Vegas, a man of great wealth and philanthropy, and an inspiring influence for good in the medical profession. Dr. Vegas speaks four languages fluently. He has contributed to literature several monographs on special surgical subjects, and in conjunction with the eminent surgeon, Dr. Cranwell, is now preparing an important work on hydatid disease. The chapter devoted to hydatids of the lung will be particularly interesting. A large number of these cases were seen in the several hospitals. Hydatid disease is very common in South America, and is thought of whenever a patient presents unusual symptoms. When these cysts occupy the lungs, the fluid can be agitated by motion and the waves can be reproduced in moving pictures. Dr. Vegas has one of the finest private libraries in South America.

Dr Pedro Chutro, one of the professors of surgery at the Medical School, is well known in the United States. He served with the French during the Great War in charge of a large hospital in France, and it is generally conceded that his work was not excelled by that of any other surgeon. At the close of the war he was requested to go to New York to demonstrate in the military hospital there his original methods of dealing with old infected compound fractures with osteomyelitis. Professor Chutro was decorated by the United States with the Distinguished Service Medal; he is one of the few foreign surgeons to receive this honor. Dr. Pasman, one of the professors of surgery in the Medical School, is also well known in the States. All the surgical work we saw in Buenos Aires was good, and carried out with characteristic skill and precision. The surgeons of Argentina compare favorably with those of any other country in the world.

School of Medicine, Buenos Aires.

Progress in Health Work.—Towns, cities and states are beginning to realize that the cheapest form of health insurance may be obtained from well organized and efficiently operated health departments. The demand for trained public health workers has grown so rapidly that it now greatly exceeds the supply. The call for public health nurses alone is so great that several years must elapse before enough women can be trained in the work to supply the communities now calling for the essential service which only a public health nurse can furnish.—*Connecticut Health Bull.*, December, 1919.

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SATURDAY, AUGUST 21, 1920

ORGANIZED VS. INDIVIDUAL EFFORT IN RESEARCH

In his presidential address delivered at the Cambridge meeting of the British Medical Association, Sir Clifford Allbutt [1] pointed out the complexity of disease and the great advantage that has accrued to research by approaching the problems from a comparative standpoint. To proceed in this way, however, requires a breadth of intellect and a wealth of observation and analysis that are ordinarily beyond the possibilities of the individual. Hence Sir Clifford argues for the organization of investigation on a larger scale commensurate with the needs of such a comparative survey, in which many intellectual forces may combine to work toward common ends. At the present time, says Allbutt, "no one stirs, save to gyrate each in his own little circle. There is no integration, no organization of research, no cross light from school to school, no mutual enlightenment among investigators, no big outlook." "Diseases," he continues, "are not 'entities,' nor even recurrent phases of independent events, but partial aspects of a universal series. The young graduates we have, many of them of great capacity; but every day we are losing them because they are not taken up at once into scientific teams; so they slacken, or drift into some other means of livelihood, and things muddle on as before. How blind we are!"

No one will gainsay the wisdom of much of this advice. The organization of scientific effort, the team play of scientific workers, during the World War illustrates well what can be accomplished in speeding up the development of new ideas, if not their actual creation. It is doubtless true that two heads are better than one. But in our modern enthusiasm for organization we are in danger of forgetting that system and survey and encyclopedic knowledge can never supplant real thinking. Thinking is, after all, an individual performance. Companies or groups of persons do not think together or devise or invent anything or any process except so far as they put together—organize, compare—the products of individual human minds.

This is, perhaps, an opportune moment to sound a note of warning lest we become blind to the limitations of organizing investigative effort. It is likewise a favorable time for uttering a plea for the individual worker in science. He must be encouraged, not merely permitted, to unfold his own personality—his own point of view and perhaps even his seeming eccentricities of mind. He must be permitted, at all events, to preserve the open mind rather than to be biased by the projects of a company of scholars. A league of investigators might promote lasting benefits to the world. No one would expect it to make a scientific discovery. Let us by all means facilitate the progress of science by furnishing the requisites for research by organized effort to promote the aims and set forth the results, by systematic planning and cooperation which will make established facts easily available and widely known. Let us increase the number and variety of national or even international institutes if there is prospect of intellectual, social or economic gain thereby. But amid this growth of the get-together spirit and better intellectual community let us always bear in mind the individual who does the thinking. We need not be blind to the need of integration in science; we must not be forgetful of the man. Genius is found in men, not in organizations.

1. Allbutt, T. C.: Universities in Medical Research and Practice, Brit. M. J. 2:1 (July 3) 1920.

A PUBLIC HEALTH PROBLEM IN THE PHILIPPINES

In 1908, Garrison [1] thus summarized his experience in the study of alimentary conditions in our insular possessions:

> The population of the Philippines presents a higher percentage of infection with intestinal worms than has ever been definitely reported from any other people, and the condition is essentially a chronic one, the results of which manifest themselves indirectly in the general physical impoverishment of the people and the high rate of morbidity and mortality accredited to other diseases.

This statement was highly significant from the standpoint of public health; even more surprising, however, was the finding [2] of intestinal parasitism in virtually all of a large number of children whose feces were carefully examined. It is, of course, recognized quite generally that infestation with some parasites, such as pinworms (oxyuriasis) and eelworms (ascariasis), is likely to be more common among children than among adults; but these Philippine records for the young were almost overwhelming in their import and raised many serious questions.

A decade later finds the conditions just referred to essentially unaltered. In a report from the Bureau of Science at Manilla, Haughwout and Horrilleno [3] register as the outcome of an examination of 100 sick

1. Garrison, P. E.: Philippine J. Sc., B. 3:73, 1908.
2. Garrison, P. E., and Llamas, R.: The Intestinal Worms of 385 Filipino Women and Children in Manila, Philippine J. Sc., B. 4:185, 1909.
3. Haughwout, F. G., and Horrilleno, F. S.: The Intestinal Animal Parasites Found in One Hundred Sick Filipino Children, Philippine J. Sc. 16:1 (Jan.) 1920.

children in the Philippine General Hospital that ninety-two were parasitized. The earliest case of parasitism was encountered in a child of 7 months; under 1 year of age the incidence was 67 per cent.; all children between the ages of 2 and 13 years were found to be parasitized. The organisms recorded lie in thirteen genera and as many species. The whipworm (*Trichuris trichiura*) was the most prevalent parasite, followed closely in frequency by *Spirochaeta eurygrata* and the eelworm (*Ascaris lumbricoides*). No evidence of cestode or trematode infection was discovered. No protozoon of proved pathogenicity, like *Endameba histolytica*, was encountered, thus suggesting a possible immunity in children. Multiple parasitism was quite common. The observed combination of pinworm and eelworm cannot fail to be objectionable, because the entire alimentary tract becomes involved thereby.

It must be frankly admitted that aside from infestation with notably pathogenic intestinal parasites like the hookworm, no definite pathologic symptoms are at present referable to the presence of the other species. Is this widespread parasitism then to be regarded as without import for childhood and growth? Does the ignorance of definable harm justify an attitude of indifference on the part of pediatricians? It may be well in this connection to review the possibilities of detriment that might be ascribed to the supposedly innocuous invaders. They may, to quote the Manila protozoologists, produce substances directly toxic, cytolytic or hemolytic; their products of metabolism may be harmful; when present in large numbers, parasites may injure mechanically the mucous lining of the alimentary tract; they may aid in the transport of pathogenic organisms; they may interfere seriously with the absorption of digestive products by their actual adherence, as in the case of *Giardia*, to the epithelial surfaces; and the parasites may occasion an actual invasion and destruction of the tissues with all the sequels.

This is, indeed, a formidable array of objectionable possibilities, even when the indictments are not yet proved for the individual cases. It would surely seem as if a serious problem were offered to practical pediatrics by the findings among the Filipino children. One cannot dismiss the suspicion that intestinal parasitism directly or indirectly contributes heavily toward the high death rate among them. The parasitism starts coincidently with artificial feeding; but even breast-fed children are not exempt in all cases. Children are everywhere notably indifferent to sanitary laws; and when to this indifference is added the existence of a highly insanitary environment, the problem of prophylaxis becomes almost insuperable. There is no treatment of proved efficacy against the whipworm, *Trichuris*, and the eggs of this organism remain viable for years. Hence we can understand Haughwout's note of despair when he writes: "One can picture the extent of the 'clean-up' process that would be required to purge a community of *Trichuris* alone, a job that would make the hookworm campaign seem like child's play in some respects." But preventive medicine has become accustomed in these days to tackle big jobs.

THE RÔLE OF DIET AND EXERCISE IN ANTISYPHILITIC TREATMENT

Carefully conducted observations on syphilitic patients have indicated that considerations of diet and exercise may deserve greater attention than is customarily regarded as requisite for the uncomplicated success of antisyphilitic treatment. The occasional appearance of more or less grave signs of intoxication after administration of preparations of arsenic and mercury or both is familiar to all who deal extensively with syphilitic patients. Sometimes the symptoms even resemble those of acute yellow atrophy of the liver, while jaundice is of common occurrence. Bailey and MacKay,[1] working in the Ontario Military Hospital, Orpington, Kent, have discovered that in patients whose livers are damaged by arsphenamin derivatives, an increase of cholesterol in the blood is an early and marked sign; it persists after other clinical signs have disappeared. As hypercholesteremia was found in nearly all of the toxic cases, they suggest, therefore, that routine estimation of blood cholesterol may furnish a valuable sign of a precarious state of the liver in persons under antisyphilitic treatment.

With respect to the values for the urea content of the blood, it appears that although some patients furnished normal figures, in the majority they were above normal. According to the Canadian investigators this was due to the high nitrogenous diet, including 150 gm. of protein a day, and to insufficient physical restrictions placed on the soldiers under observation. The blood figures were usually more favorable when rest was rigorously enforced.

It is known that diet plays a part in the ease of recovery from the effects of delayed poisoning by various drugs, including phosphorus and chloroform, which have been investigated extensively under experimental conditions. For example, Davis and Whipple,[2] who have studied liver damage and repair in dogs poisoned by chloroform, noted that sugar and diets rich in carbohydrates, fed in the days preceding chloroform anesthesia, exert a marked protective action against liver injury. Fats alone, or combinations of food containing fat in large proportion, induce a maximal susceptibility to liver injury. Skim milk alone is highly protective. A diet of bread and skim milk or any rich carbohydrate diet gives the optimal liver repair. A diet of cooked skeletal muscle is not favorable for rapid liver repair.

1. Bailey, C. V., and MacKay, Angus: Toxic Jaundice in Patients Under Antisyphilitic Treatment, Arch. Int. Med. **28**:628 (June) 1920.
2. Davis, N. C., and Whipple, G. H.: The Influence of Fasting and Various Diets on the Liver Injury, Effected by Chloroform Anesthesia, Arch. Int. Med. **23**:612 (May) 1919.

If the possibility of damage comparable with "delayed poisoning" in chloroform anesthesia occurs in medication with arsphenamin and related products, we agree with Bailey and MacKay that it would seem advisable in the treatment of syphilis to institute a rich carbohydrate diet low in fat and protein. This diet should precede the treatment by several days and should be continued throughout its full course. The effects of increase of protein in the diet and of exercise might be controlled by the estimation of urea in the blood. At any rate, the consideration of diet in this chapter of medicine constitutes a therapeutic novelty.

THE NATURE OF THE FAT-SOLUBLE VITAMIN

The discovery of the dietary importance of that property of many foods which is now termed fat-soluble vitamin or fat-soluble A represents a contribution of American physiologists [1] to the science of nutrition. It has been repeatedly verified both in this country and abroad. According to the observations made on a variety of experimental animals, the lack of the fat-soluble vitamin in the diet during adolescence may lead to an inhibition of growth together with symptoms of decline in health. Most conspicuous in a specific way is the apparently increased susceptibility to bacterial infection. In the case of rats this lowered resistance first betrays itself in many instances by the appearance of a characteristic disorder of the external eye which has provisionally been classed as a xerophthalmia. It usually begins with a swelling of the lids which is followed by an inflamed and catarrhal condition of the conjunctivae. This rapidly becomes worse, and the discharge, which is at first hemorrhagic, frequently becomes purulent. If untreated, the cornea may become involved and total blindness result. If a food containing fat-soluble vitamin is administered, the symptoms usually clear up in a few days without further treatment, and growth is resumed. The same phenomena have been observed in mice, and more recently in rabbits kept on diets poor in the fat-soluble vitamin.[2] A possible relation of the lack of the latter to the occurrence of phosphatic calculi has also been pointed out by Osborne and Mendel.[3]

Whether and in what manner a dietary deficiency in fat-soluble vitamin plays a part in human disease remains to be ascertained. The probability of the need of this food accessory in the ration of man is large and the possible dire effects of a lack of it are being discussed widely at present, notably in relation to the pathogenesis of pellagra, rickets and xerophthalmia in childhood. The fact that many fats, such as lard, vegetable oils and hydrogenated fats, which have found widespread use in the dietary of man in recent years, are virtually devoid of fat-soluble vitamin has caused some concern owing to the relatively high cost of those fats, like milk fat and egg fat, which are rich in it. It is a relief to know, however, that the fat-soluble vitamin has a far wider distribution in nature than the earlier studies led physiologists to suspect. Only recently the researches of McCollum, Steenbock and their collaborators at the University of Wisconsin,[4] and of Osborne and Mendel [5] in New Haven, have indicated the richness of many sorts of plant tissues in all familiar types of vitamins, thus placing the dietary importance of "vegetables" in a new light.

In commenting on this information, Osborne and Mendel remark that it emphasizes the use of vegetables to supplement the refined foods of the modern food industry which furnishes products rich in proteins, fats and carbohydrates, but in many cases comparatively deficient in the vitamins. The newly acquired facts, they add, serve as a further reminder that the fat-soluble vitamin need not be sought solely in foods known to be rich in fats. Fat-soluble vitamin has never been isolated, nor has it been concentrated in any way which avoids the simultaneous presence of ordinary fats, to some extent at least. Although its reactions and behavior toward solvents suggest a lipoidal character, Steenbock and Boutwell [6] have demonstrated that the fat-soluble vitamin resists saponification with alkalis whereby true fats are converted into soaps. Hence it can scarcely be regarded as identical with fats. This fact, for which some evidence had already been available, represents a distinct step in advance in the study of vitamins.

The extracts containing fat-soluble vitamin as obtained from natural products are invariably colored. Yellow corn is richer in fat-soluble vitamin than is white corn; there is a similar contrast between colorless lard and the yellow milk fat and egg fat. Hence Steenbock [7] has advanced the theory that the vitamin may be a yellow pigment or at any rate a closely associated substance. His latest contribution is corroboratory; it also indicates that the vitamin attends the carotin rather than the xanthophyll variety of pigments, either or both of which may represent the yellow col-

1. McCollum, E. V., and Davis, M.: J. Biol. Chem. **15**: 167, 1913. Osborne, T. B., and Mendel, L. B.: Ibid., p. 311.
2. Nelson, V. E., and Lamb, A. R.: The Effect of Vitamine Deficiency on Various Species of Animals, I, The Production of Xerophthalmia in the Rabbit, Am. J. Physiol. **51**: 530 (April) 1920.
3. Osborne, T. B., and Mendel, L. B.: The Incidence of Phosphatic Urinary Calculi in Rats Fed on Experimental Rations, J. A. M. A. **69**: 52 (July 7) 1917.
4. Steenbock, H., and Gross, E. G.: Fat-Soluble Vitamine, II, The Fat-Soluble Content of Roots, Together with Some Observations on Their Water-Soluble Vitamine Content, J. Biol. Chem. **40**: 501 (Dec.) 1919; IV, The Fat-Soluble Vitamine Content of Green Plant Tissues, Together with Some Observations on Their Water-Soluble Vitamine Content, ibid. **41**: 149 (Feb.) 1920. McCollum, E. V.: Newer Knowledge of Nutrition, New York, 1919.
5. Osborne, T. B., and Mendel, L. B.: The Vitamines in Green Foods, J. Biol. Chem. **37**: 187 (Jan.) 1919; Nutritive Factors in Plant Tissues, IV, Fat-Soluble Vitamine, ibid. **41**: 549 (April) 1920.
6. Steenbock, H., and Boutwell, P. W.: Fat-Soluble Vitamine, VI, The Extractability of the Fat-Soluble Vitamine from Carrots, Alfalfa, and Yellow Corn by Fat Solvents, J. Biol. Chem. **42**: 131 (May) 1920.
7. Steenbock, H.: White Corn vs. Yellow Corn and a Probable Relation Between the Fat-Soluble Vitamine and Yellow Plant Pigments, Science **50**: 352 (Oct. 10) 1919.

oring matter in animal and plant foods. These findings, if they are further substantiated, mark a distinct step in advance toward the goal of discovering the nature of the fat-soluble vitamin.

Current Comment

PIE AND DIGESTION

There is a widely current slang expression which bewails the depressing circumstance that "somebody is always taking the joy out of life." Many Americans have become wedded early to an outspoken liking for pie, that typical national pastry. The predilection for this article of diet seems to grow with the years. Sooner or later, however, the aforesaid somebody, who is more than likely to be a member of the medical profession is certain to issue a note of warning against the alimentary dangers that lurk in pie. Cake, the distant pastry relative, is somewhat less likely to form the subject of objections from the physiologic critic, while puddings usually belong to the immunes, or at least receive tolerant consideration. The proof of the pudding—and why not also of the pie—is the eating. Accordingly, a number of gastro-enterologists [1] at the Jefferson Medical College, Philadelphia, have come to the defense of pie by actually determining the gastric response to it and analogous foods in the healthy human stomach. Direct comparisons of a variety of pies, cakes and puddings representative of American culinary art, on the same persons, indicated that pies "were handled more readily than cakes, and puddings somewhat more readily than either." For those who can think best in terms of statistics, it may be stated that the average gastric evacuation time of puddings was two hours and eighteen minutes, against two hours and twenty-seven minutes for pies; whereas cakes followed in the wake with an average record of three hours and two minutes. Averaging the highest total acidities, values were obtained for puddings of 92, for pies of 90, and for cakes of 90. Some of these values are not widely divergent from the classic data obtained on Alexis St. Martin, whose stomach permitted Beaumont to make his pioneer investigations in gastric digestion. There is no occasion to report here the insignificant distinctions between custard pie and lemon meringue, for example, in their gastric behavior; but it must be admitted that mince pie, so often regarded as an arch offender of the digestive tract, requires a rather long time (from two and three quarters to three and one quarter hours) to leave the stomach. The addition of ice cream to a piece of pie—a unique American combination—does not increase the burden of the stomach to any extent, and the conventional apple pie and cheese likewise give a conservatively good report. To a few persons it may be a consolation to know that angel's food cake remained distinctly longer in the stomach than did devil's food cake. Of course, gastric evacuation is not the sole, complete test of the dietary worth of a food.

1. Miller, R. J.; Fowler, H. L.; Bergeim, O.; Rehfuss, M. E., and Hawk, P. B.: The Gastric Response to Foods, XII, Response of the Human Stomach to Pies, Cakes and Puddings, Am. J. Physiol. **52**: 248 (June) 1920.

VALUE OF THE SCHICK TEST IN RELATION TO DIPHTHERIA

The importance of the Schick test as an index of antitoxin immunity to diphtheria ought to be familiar to physicians. However, the recrudescence of Fourth of July casualties, to which attention was recently called in THE JOURNAL,[1] teaches clearly that it is human to forget easily. Therefore the significant lessons of modern preventive medicine need and deserve to be reiterated again and again so long as they are likely to lead to public benefit. The Schick test, which can be applied with great ease to large numbers of persons, makes it possible to differentiate those immune from those susceptible to diphtheria; and it also facilitates the attempt to increase the number of the immune by suitable prophylactic toxin-antitoxin injections. The testimony as to the value of the test is already fully convincing. Blum [2] recently demonstrated what can be accomplished in a large home for infants where diphtheria had been endemic as late as 1915. When it was ascertained by the Schick test that 37 per cent. of the inmates were susceptible to the disease, attempts were made to establish an immunity in this group. How successfully this was accomplished, through injection of those susceptible, is shown by the result that the same institution has been rendered diphtheria free during the last five years. The outcome with more than a thousand children shows, furthermore, that a negative Schick test is evidence of the presence of sufficient antitoxin in the body to protect the individual against infection with diphtheria. Changes in the Schick reaction from negative to positive during the first three years of life, owing to the loss of inherited immunity, were found by Blum to be sufficiently numerous to justify retesting, at least in large institutions, during this period at intervals of a few months. The duration of the active immunity conferred at different ages on persons susceptible to diphtheria, by injection of toxin-antitoxin mixtures, remains to be ascertained with greater precision. In young children the duration presumably lasts far longer than two years. The lesson is obvious.

1. This Year's Fourth of July Celebration, editorial J. A. M. A. **75**: 181 (July 17) 1920.
2. Blum, Julius: Active Immunization Against Diphtheria in a Large Child-Caring Institution, Am. J. Dis. Child. **20**: 22 (July) 1920.

THE PHYSICIAN'S OFFICE

The people have money and they are spending it. But, like the woman who bought the pair of silk stockings, they want something to show for it. With incomes anywhere from $8 to $15 a day, the bricklayer who buys a flivver, the cap maker who has a fur coat, the tailor with season tickets for the opera, are able to pay good fees to their physicians. But they want the best, and the physician should equip himself to give it to them. The physician who plods along in shabby quarters, dependent wholly on his five unaided senses for diagnostic ability, his only reference works some dilapidated textbooks of a previous decade, will not suit the taste of the new type of wage earner.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST; SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Fire Destroys Sanatorium.—White's Sanatorium, Enterprise, has been destroyed by fire at a loss of $30,000.

Memorial Cornerstone Laid.—The cornerstone has been laid for the Soldiers' Memorial Hospital, which is being erected in Montgomery, and will cost about $100,000.

New Quarantine Plant Needed.—The Surgeon-General of the U. S. Public Health Service, appreciating the need for a new quarantine station at Mobile, has recommended that an appropriation of $400,000 be made for this purpose.

Convict Camp Abandoned.—Abandonment of the Mobile County Convict Camp, Mobile, which has been stigmatized as a "health menace," by the state prison inspector, was ordered by the board of revenue and road comissioners, August 2.

GEORGIA

Medical Examiners Needed.—The Federal Board for Vocational Education, Atlanta, announces that it desires to employ a number of physicians as field examiners for disabled exservice men for three months or longer, at a salary of $220 a month and necessary expenses when traveling in the field. Application should be made to Dr. Clarence S. Merriam, District Medical Officer, 814 Forsythe Building, Atlanta.

Dr. Long to Be Honored.—The memory of Dr. Crawford W. Long, Athens, is to be commemorated at the University of Georgia, by a bronze medallion to be placed in one of the university buildings through the generosity of Joseph Jacobs, Atlanta. The board of trustees has accepted the offer and has appointed a committee to arrange for the presentation. ——An appropriation for a statue of Dr. Long in the Capitol Building, Washington, D. C., will be asked of the state legislature by the Medical Association of Georgia. Dr. Garnett W. Quillian, Atlanta, is chairman of the committee appointed for this purpose.

Personal.—Dr. Harry Moses, Macon, while performing an operation at a hospital was stricken with appendicitis and underwent operation at the Macon Hospital, July 24.——Dr. Robert A. Herring, Milledgeville, has been made health officer of Wilmington, N. C., and entered on his new duties July 20. ——Dr. Richard L. DeSaussure, Atlanta, commissioner of health of Floyd County, has resigned to accept a similar position at Brunswick, Glynn County.——Dr. R. W. Todd, Brunswick, has resigned as commissioner of health of Glynn County to accept a similar position in Marietta, Cobb County. ——Dr. Hollis F. Hope, Lafayette, has resigned as commissioner of health of Walker County and Dr. Joseph H. Johnson, Millan, has been elected in his place.

District Society Meetings.—The annual meeting of the Seventh District Medical Society met in Dalton as the guest of Whitfield County Medical Society, July 8. It was unanimously decided to appoint a committee to raise funds for a suitable memorial to Dr. Robert B. Battey, Rome. Rome was selected as the next place of meeting and the committee named to select the Battey memorial was directed to erect it between this time and the date of the meeting of the state medical association which convenes in Rome next summer. Dr. Howard E. Felton, Cartersville, was elected president; Dr. Charles F. McLain, Calhoun, vice president, and Dr. Mather M. McCord, Rome, secretary-treasurer.——The midsummer meeting of the First District Medical Society was held at Savannah, July 15, and the following officers were elected: president, Dr. Charles Usher, Savannah; vice presidents, Drs. J. O. Strickland, Pembroke, and James O. Baker, Savannah, and secretary-treasurer, Dr. B. M. Bishop, Savannah.

ILLINOIS

Field Day.—A field day is to be given to all members of the Chicago Medical Society and their families by the North Side Branch of the society on the grounds of the St. Mary's Training School, near Desplaines, Wednesday, September 15.

Negro Physicians Purchase Hospital.—An association of colored physicians of Chicago, of which Dr. Benjamin R. Bluitt is president and Dr. Fred C. Cade, secretary, has purchased the Fort Dearborn Hospital and Training School for Nurses at 3831-3835 Vernon Avenue.

Hospital Projects Unite.—Urbana has abandoned its hospital project and by a vote of the board of directors will join hands with the board of directors of the Julia F. Burnham Hospital, Champaign, in making a success of the forthcoming drive for $175,000 to remodel the present building and erect the first unit of a new hospital.

Hospital Buildings Chartered.—The secretary of state has granted charters to St. Elizabeth's Hospital, Belleville; St. Francis' Hospital, Litchfield; St. Clara's Hospital, Lincoln; St. Joseph's Hospital, Highland, and St. Anthony's Hospital, Highland. These hospitals are conducted by the Sisters of St. Francis and are affiliated with St. John's Hospital, Springfield, and a number of others in Illinois and adjoining states.

Organization Plans.—The organization committee of the Chicago Medical Society has asked the presidents of the various branches of the society to call a preliminary meeting this month to consider the following matters: important pending legislation, unusual action of osteopaths, chiropractors, naprapaths, Christian scientists and other pseudo-health cults; dangers of socialized medicine to the public as well as the profession, and changed economic standards and the inadequacy of medical incomes.

Hospital Committee Meets.—The committee on medical education and hospitals of the Illinois Medical Society and representatives of the Illinois Hospital Association and of medical colleges met at the Sherman Hotel, Chicago, on Friday, August 13, to discuss the eligibility of hospitals for the training of interns. It was determined that hospitals should have at least twenty-five beds; organized staffs; complete histories and records; laboratories for routine clinical, microscopic, pathologic and bacteriologic work; complete roentgen-ray departments; expert instruction in anesthesia; instruction in obstetrics; and definite rules in regard to the duties and privileges of interns.

IOWA

Gives Library to State.—Dr. Albert A. Anderson, Des Moines, has presented his medical library of 300 volumes to the state library in the Historical Building, Des Moines.

Typhoid Fever in Pella.—On July 14, forty-three cases of typhoid fever were reported in Pella, and D. S. Griswold, the state epidemiologist has been sent to Pella to investigate and to take charge of the situation. The source of infection has been traced to an infected well which was in general use.

Personal.—Dr. Robert E. Jameson, Davenport, who has been seriously ill in Marcy Hospital, is reported to be improving.——Dr. Frederick L. Appel, Muscatine, who has been seriously ill, is reported to be convalescent.——Dr. Oliver G. Winters, Des Moines, has been appointed chief medical director for the Yeomen of America, succeeding Dr. Charles F. Smith, Des Moines.

LOUISIANA

Permit Revoked.—The permit of Dr. Anthony J. Monte, New Orleans, to sell drugs is said to have been revoked recently.

Appropriations Increased.—The appropriation for the state board of health for relief and emergency work has been increased by the legislature from $60,000 to $75,000.

To Aid Drug Addicts.—The Louisiana State Board of Health has decided to arrange for a special section of the Charity Hospital of New Orleans to be devoted exclusively to the treatment of drug addicts.

MICHIGAN

Dean Resigns.—Dr. Wilbert B. Hinsdale, Ann Arbor, for quarter of a century dean of the Homeopathic School of the University of Michigan, has resigned.

Dr. Case Honored.—The July issue of the *Welfare Bulletin*, published by the Battle Creek Sanitarium Welfare League, is devoted almost entirely to the war story of Dr. James T. Case, interestingly told and profusely illustrated.

State to Take Over Tuberculosis Clinics.—Arrangements have been completed whereby the state department of health will take over the free tuberculosis clinics and the tuberculosis work among former service men hitherto conducted by the state antituberculosis association.

Smallpox.—On July 17 it was reported by the Detroit Department of Health, that smallpox was five times as prev-

alent as is customary at this season. Since April 28, the vaccination squads have examined 34,900 people and vaccinated 6,930. About 20 per cent. of the individuals examined were considered to be unprotected against smallpox.

Health Budget.—The budget of the Detroit Department of Health for 1920-1921 allows $1,020,570 for the maintenance of the department, or $1.03 per capita as compared with 95 cents in the previous years' budget. Expenditures of $25,000 for plans for a new city general hospital, and of $1,579,800 for the construction of a 300-bed tuberculosis sanatorium have also been allowed during the last biennium.

Combating Typhoid.—The state health department has purchased a motor truck, equipped as a laboratory, and is touring the summer resorts of the state testing water, milk and sewage at each resort visited. A bacteriologist and sanitary engineer accompany the truck and Dr. C. C. Young, director of laboratories of the department, is giving several special lectures to summer school students and others. The first appearance of the truck was at Adrian, July 19.

MINNESOTA

Alterations at City and County Hospital.—Plans have been prepared and bids solicited for extensive alterations and repairs at the Minneapolis City and County Hospital.

Village to Issue Bonds for a Hospital.—It has been decided that the village of Taylor's Falls will issue bonds to the amount of $10,000 to establish and maintain a hospital.

Typhoid Prevalence in St. Paul.—The incidence of typhoid in St. Paul is now believed to have reached its apex, as no new cases or deaths have been reported during the last week. None of the data on the thirty-two cases which have been reported has given any clue to the source of infection. It is believed, however, to be a typhoid carrier.

Work of Venereal Disease Division.—The division of venereal diseases of the Minnesota State Board of Health, coordinated with the U. S. Public Health Service made a total of 3,043 Wassermann examinations between April 1 and June 30, of which 398 proved positive, 2,368 negative and 277 doubtful. In addition to this seventy-six unsatisfactory tests were made, making a grand total of 3,119, with a positive percentage of 12.6 per cent. During the same period 606 smears were examined for gonococci with a positive percentage of 39.9 per cent.

Dr. Mayo Honored in London.—A dinner was given July 26 by the president, vice president and governors of the American Hospital in London, to Dr. Charles H. Mayo, Rochester. The Earl of Reading presided, Sir William Arbuthnot Lane spoke of the great advantages which would accrue to medical science through the opening of the hospital; Rt. Hon. Arthur J. Balfour expressed the hope that the hospital would prove beneficial to American medical students visiting England, and Dr. Mayo and Ambassador Davis paid tribute to Major-Gen. William C. Gorgas.——Dr. Mayo has returned from his trip to Europe, where he attended the meeting of the British Medical Association at Cambridge, and of the International Surgical Society in Paris. He reports "a most surprising recovery from war conditions" and states that there is apparently "no setback nor depression—in fact, but little to show that they had a war."

NEW JERSEY

Child Hygiene Bureau Stations Opened.—The Bureau of Child Hygiene of the New Jersey State Department of Health has opened two stations, one at Lambertville, and one at Frenchtown, the latter to be the center of work which will include Milford and Stockholm. A social worker has been appointed to work under the direction of Camden Board of Health. Her salary will be paid by the Child Hygiene Bureau, which will also suggest her policies. The Child Hygiene Bureau has taken the initiative in securing cheaper or free ice for families who could not afford to have it otherwise.

Physiatric Institute Opened.—An institution, known as the Physiatric Institute, devoted to diabetes, nephritis, vascular hypertension and other metabolic disorders, has been established at Morristown. The site is the former estate of Otto H. Kahn, comprising some 200 acres. Dr. Frederick M. Allen is the director. The backers are a group of prominent New York and Philadelphia men, and financial support is sought chiefly from the individuals and families afflicted with these diseases. The organization is in three divisions. One is a sanatorium for the treatment of paying patients, the income from which helps to support the other two divisions. The second is a charitable branch, which offers treatment to poor patients at reduced rates or free, as far as the available funds can provide. The third is a research division, aiming to advance the knowledge and treatment of these conditions by all the facilities for clinical and laboratory study which a specialized institution of this kind can offer.

NEW YORK

New Reportable Diseases.—Botulism and lethargic encephalitis have been added to the list of reportable communicable diseases by recent action of the Public Health Council.

Rockefeller Provides Hospital for Women's Reformatory.—John D. Rockefeller, Jr., has agreed to turn over at a nominal rental of $1 a year his social laboratory and bureau as a psychopathic hospital for the State Reformatory for Women, Bedford. He will first make repairs costing $1,000. These buildings will be occupied at once. Dr. Menas S. Gregory announces that several psychiatrists will be added to the staff to classify the prisoners and determine their degree of mental responsibility.

Institution for Mental Convalescents.—A meeting of the directors of the Home and Farm Institution for Mental Convalescents recently held a meeting in New York City at which plans were made for a campaign for a membership of 50,000. At the same time an intensive campaign will be conducted to raise $1,000,000 for the purpose of constructing a large building in the Catskill Mountains, where the poor who are nearing or have reached the borderline of insanity will be treated in an effort to restore them to mental vigor.

Insane Aliens Sent Home.—During the last year 290 insane aliens have been sent from New York institutions to the countries from which they came. Of this number 147 were deported by the immigration authorities and 143 at the instance of the medical examiner of the state hospital commission. According to a report to be issued later 48 per cent. of the insane in this state, or about 17,000, are foreign born, and both parents of 66 per cent. of the state's insane are of foreign birth. Of the 17,000 foreign born insane in state institutions all except 500 are not deportable, having been in this country longer than the five-year limit required for deportation proceedings.

Graduate Bulletin on Orthopedic Surgery.—Bulletin No. 3 of the New York Association for Medical Education deals with orthopedic surgery. The student should be a graduate of a high grade medical school and should have completed a year's internship on the surgical side of a general hospital. The course preparing him for practice as an orthopedic surgeon would consist of from six to twelve weeks of work in applied anatomy, and review courses in the fundamental medical sciences such as embryology, pathology and bacteriology. This work should be followed by an internship of a year or more in some hospital having a large orthopedic service or the student should associate himself with a surgeon practicing this specialty. The *Bulletin* lists the places in New York City where special training in orthopedics may be obtained.

New York City

Smallpox Brought from Jamaica.—Forty-three passengers on the British steamship *Princess May*, which arrived recently from Port Antonio, Jamaica, were sent to Hoffman Island for observation following the discovery of a case of smallpox on the vessel.

Bring Records of Anticholera and Antituberculosis Vaccine.—Dr. Florestan Aguilar, dean of the College of Dentistry of Madrid, and Dr. Sebastian Recasans of Madrid, arrived in New York City on the Holland-American liner *Ryndam*, August 12. They bring with them the records of Professor Ferran on anticholera and antituberculosis vaccine which they expect to present to the Rockefeller Institute.

Personal.—Dr. Charles G. Child, Jr., has been appointed consulting gynecologist to St. Bartholomew's Hospital, New York City, and to Nassau Hospital, Mineola, L. I.——Dr. L. Duncan Bulkley announces that he has retired from the active practice of dermatology and will devote his attention solely to consultation work in dermatology and to the treatment of cancer.——Dr. S. Josephine Baker has been made consultant in child hygiene for the U. S. Public Health Service and has been commissioned as surgeon in the reserve of the service.——Dr. Margaret Brew, the first woman alienist to become a member of the staff of the Binghamton State Hospital, has entered on her duties in the women's ward of the institution.——Dr. Rodney R. Williams, for ten years a member of the staff of the Binghamton State Hos-

pital, has been promoted to the position of first assistant at the Hudson River State Hospital, Poughkeepsie.——Dr. William A. Wovschin, the Bronx, sailed for Europe recently to make a sanitary survey of Ukrainia, Poland and other plague-stricken European countries. He will also make a special investigation for the New York State Board of Health, of the smallpox epidemics reported in Scotland and the north of England.——Dr. Magda Telkes was assigned on August 1 to the roentgen-ray department of the Mayo Clinic, Rochester, Minn., on a Mayo foundation scholarship in roentgenology.

OHIO

Typhoid in Lakewood.—Following a reception held in Lakewood, June 25, thirty-eight of the 211 guests are reported to have been ill from typhoid fever. All the patients are said to be out of danger.

Illegal Practitioners Fined.—In the Cleveland Municipal Court on July 28, L. D. Moore was found guilty of practicing medicine without a license and was fined $500.—On July 29, Leo J. Czechowski, on a similar charge, was fined $50 and costs with an additional $450 to be paid within a year. He was ordered to cease the practice of medicine.

Faculty Changes.—The following promotions and appointments in the School of Medicine of Western Reserve University, Cleveland, are announced: Drs. Marion A. Blankenhorn and Roy W. Scott, promoted from instructors to senior instructors in medicine; Dr. Paul J. Hanzlik, promoted from assistant professor to professor of pharmacology and a member of the faculty; Dr. Guthrie McConnell, appointed associate in pathology.

Personal.—Dr. David Marine, associate professor of experimental medicine in Western Reserve University, Cleveland, has been elected director of laboratories in the Montefiore Home and Hospital, New York City.——Prof. George M. Stewart, director of the H. K. Cushing Laboratory of Experimental Medicine, had conferred on him the honorary degree of Doctor of Laws at the recent commencement exercises of the University of Edinburgh, Scotland.——Dr. James B. Poling has been elected to fill the unexpired term of the late Dr. Arthur L. Jones, as health commissioner of Lima.——Dr. John D. Spellman, Cincinnati, has been appointed assistant superintendent of Mt. Sinai Hospital, Cleveland, and assumed his new duties, August 2.——Drs. George W. Crile, Cleveland, and Charles J. Lukens, Toledo, were the guests of honor at the meeting of the Northwestern Ohio Medical Society at Cedar Point, July 27.——Dr. Isaac Kay, said to be the oldest medical practitioner in Ohio is seriously ill at his home in Springfield.

PENNSYLVANIA

Baby Clinic Opened.—A baby clinic has been opened at the Community House, Marietta, under the supervision of a nurse.

Personal.—Dr. Frederick L. Van Sickle, Scranton, president of the Lackawanna County Medical Society, has resigned to become executive secretary of the Medical Society of the State of Pennsylvania with headquatters at Harrisburg.——Drs. H. Hershey Farnsler, Clarence R. Phillips and William T. Douglas, Harrisburgh, have resigned from the staff of the Dauphin County Tuberculosis Clinic.

Physician's License Revoked.—At a recent meeting the Pennsylvania Bureau of Medical Education and Licensure revoked the license of Dr. William Bricker, Sr., of Philadelphia, for having performed an illegal operation which resulted in the death of the patient. Following his arrest, Dr. Bricker was released on $40,000 bail but immediately fled to South America where he is now fighting extradition proceedings.

Philadelphia

Tuberculosis Society Examines Children at Playgrounds.—Examinations for physical defects and for malnutrition are being conducted at playgrounds and recreation centers throughout the city by the Pennsylvania State Tuberculosis Association. According to Dr. Jeanette Sherman, the examining physician, most of the children of Philadelphia are from 1 to 10 pounds under weight. Whenever a child is found defective it is sent to the proper institution for treatment.

Farm Opened by Health Council.—Philadelphia's first health-building home for children is being opened at Brown's farm, near Torresdale, by the Philadelphia Health Council and Tuberculosis Committee. It is a direct result of findings in the health council's portable health clinics, started in eleven recreation centers this summer. Of the 999 boys and girls weighed and measured in the clinics during July only 300 were found normal in weight. Virtually all of the 283 given thorough physical examination were found defective in some way.

Relief for Soviet Russia.—The Philadelphia district branch of the Soviet Russia Medical Relief Committee recently held one meeting at which $1,400 was raised and is arranging for a larger meeting to be held August 25, at which Dr. John Ohsol, a member of the second Russian Duma, and M. Isaac McBride, who has recently returned from Russia, will speak. Appeals have been sent to physicians, dentists, druggists and manufacturers asking for contributions of money, drugs, disinfectants, dressings, and other surgical supplies, which are urgently needed. A conference will soon be called to consider the menace to the United States from the epidemic diseases raging in Russia.

TENNESSEE

University of Tennessee Notes.—The University of Tennessee College of Medicine will erect a pathologic laboratory building to cost $75,000 near the Memphis General Hospital. This is in accordance with a contract between the university and the Memphis General Hospital by which the school has entire control of the teaching facilities in the hospital for a period of twenty years and the school will nominate the medical, surgical and laboratory staffs of the hospital. A similar arrangement is also in force with the Baptist Memorial Hospital. During the year, eight scholarships have been established; two amounting to $102 each and six amounting to $60 each.

The Oakville Sanatorium.—Oakville Memorial Sanatorium, now in course of construction, is located on a tract of land of 160 acres near Oakville, and is expected to be ready for occupancy February 1. There are to be five buildings, an administration building, a service building, two one-story buildings for men and women, respectively, and an infirmary for negro patients. The initial capacity of the hospital will be 110 beds. Plans are made providing for an increase to 300 or 400 patients if necessary. The trustees have also reserved a tract of land of 10 acres on which to build a preventorium for children with tuberculous tendencies or who have been exposed to tuberculosis.

TEXAS

Personal.—Dr. Eugene O. Chimene, Houston, has been elected health officer of Floyd County, Ga.——Dr. Sarah Rudnick, Houston, sailed on the steamship *Belvidere* from New York for Serbia, July 15, to do medical reconstruction work for the Serbian Child Welfare Association.

Health Conditions on Mexican Border.—After a conference between the state health officer and the state labor commissioner, July 30, it is announced that steps will be taken to formulate a cooperative program to handle existing conditions on the Mexican border, information having been received that large numbers of Mexicans without authority are crossing into Texas and may constitute a menace to the health of the citizens of the state.

Bubonic Plague.—One death from bubonic plague occurred in Galveston, July 28, and one July 29. This makes a total of five cases of plague in Galveston, four of which resulted fatally.——A negro woman died in the Isolation Hospital, Beaumont, from bubonic plague. One patient in that city continued to show improvement. Beaumont has thus far had eleven cases of plague.——Twenty thousand rats a week are being caught in Beaumont, with a percentage of infected rats of about one fifth of 1 per cent.——A conference of state and city health officers was held in Galveston, August 3 and 4, to consider measures for eradicating bubonic plague and to instruct health officials regarding the control of this disease.

VIRGINIA

Library Founded.—The Roanoke Academy of Medicine and Surgery has organized a medical library to be operated by, and in conjunction with the Roanoke city library.

Sites for New Hospitals Offered.—Twelve bids for sites for the new U. S. Public Health Service hospital have been received by the secretary of the chamber of commerce of Norfolk.

Without Money Clinic Must Close.—Dr. William F. Cooper, health officer of Newport News, has been notified that if the city council does not appropriate enough money to operate the detention house and city clinic, both institutions must be

closed. The detention house and clinic need about $500 a month in salaries and an equal amount or more in food and medicine. The council has been appropriating only $500 a month for both institutions.

University News.—The University of Virginia Medical Department has secured $16,000 from alumni and friends to provide additional equipment and instructors necessary to permit the admission of eighty instead of thirty-six students to the freshman class this fall. Through a relationship established with the Blue Ridge Sanatorium of the Virginia State Board of Health, which is located 2½ miles east of the university, medical students are to serve as clinical clerks, the same as in the wards of the University Hospital. This sanatorium is for tuberculous patients and has a capacity of 120 beds.——Arrangements have been made by the university to send its third-year students to the Catawba Sanatorium for a four-week course of instruction.

WISCONSIN

Personal.—Dr. James P. Dean, Madison, was operated on for appendicitis, July 23, at St. Mary's Hospital, Madison.

New County Hospital Planned.—It is announced that the county board has accepted the plans for the new Milwaukee County Hospital.

New Duties for Health Officers.—It is announced that all health officers in Wisconsin in municipalities of over 750 population are about to be enrolled as assistant collaborating epidemiologists.

Help for Cripples.—At a special session of the Wisconsin Legislature an order was passed making provision to undertake the care of children and adults suffering from deformities. This bill is on the same order as the Haskell-Klaus bill which was passed in Iowa in 1918.

Physicians' Picnic.—The annual picnic of the Beloit Physicians' and Surgeons' Club was held on the grounds of the Beefsteak Club, July 28.——Rock County Medical Society held its annual picnic near Lake Koshkonong, July 29.——Fond du Lac County Medical Society held its annual picnic at Green Lake, July 29.

GENERAL

Tuberculosis Conferences.—The New England Tuberculosis Conference will be held at Concord, N. H., September 29 and 30.——The North Atlantic Tuberculosis Conference will be held at Richmond, Va., October 7 and 8.

Southwestern Pediatric Specialists Organize.—Pediatric specialists of southern California, Arizona and New Mexico, met in Los Angeles recently and organized the Southwestern Pediatric Society, electing Dr. Henry Dietrich, president, Dr. C. Edgerton Carter, vice president, and Dr. Oscar Reiss, secretary-treasurer, all of Los Angeles.

Specialists Hold Session.—At the eighth annual session of the Pacific Coast Oto-Ophthalmological Society held in Portland, Ore., July 29 to 31, the following officers were elected: president, Dr. George W. Swift, Seattle; vice presidents, Drs. Edward E. Maxey, Boise, Idaho, and Joseph O. Chiapella, Chico, Calif., and secretary-treasurer, Dr. Ernest C. Wheeler, Tacoma, Wash.

International Conference on Tuberculosis.—The National Tuberculosis Association announces from its headquarters at 381 Fourth Avenue, New York City, that an International Conference on Tuberculosis will be held in Paris the week of Oct. 7, 1920. The last International Conference on Tuberculosis was held in Rome in 1912. Leon Bourgeois, president of the Council of the League of Nations, will preside.

Sale of Christmas Seals.—The National Tuberculosis Association has appealed to trade journals and class publications for support in a national campaign for the sale of tuberculosis Christmas seals, to be carried out from December 1 to December 11. It requests that publications use a special cover for one issue; use special stories or articles dealing with tuberculosis and the Christmas seal, and use electrotypes or copy for display advertisements.

Burial of General Gorgas.—The body of Major-Gen. William C. Gorgas was interred at Arlington National Cemetary, August 16. Services were held at the Church of the Epiphany, Washington, D. C., whence a military escort of two troops of cavalry, a regiment from the tank corps, a battalion of infantry, two companies of engineers, a company of coast artillery, motor ambulances, and sanitary troops, under command of Brig.-Gen. Grote Hutchinson, conducted the body to the cemetery. Members of the cabinet and of the diplomatic corps, officers of the Army, Navy, Public Health Service and the American Medical Association, noted scientists and physicians participated in the last honors paid to the great sanitarian.

American Congress of French-Speaking Physicians.—The *Bulletin médical de Québec* announces that the Sixth Congress of French-Speaking Physicians of North America is to be held at Quebec, Sept. 9 to 11, 1920. So many have sent in their names already that it promises to be the most successful gathering of the kind yet held. The four subjects appointed for discussion are nephritis; treatment of wounds; industrial accidents, and venereal diseases. There are to be five reports on the last mentioned subjects and two for each of the others. The speakers include Drs. A. LeSage, G. Ahern, A. Simard, and A. H. Desloges. The president and secretary are Drs. Arthur Rousseau and A. Vallée, and they warn to apply early for hotel accommodations.

Suicides Increase.—The semiannual report of the Save-a-Life League reports that during the first six months of this year there were 2,771 suicides in the United States, of whom 1,810 were men and 961 women. There were 2,063 in the same period last year. In New York, according to the report, there were 341 suicides in the first six months of this year. Of these 234 were men and 109 women. The most frequent means employed was illuminating gas, 141 having died in this way. The figures show that there has been an increase in the number of suicides among women, which the league attributes to the complexity of their lives owing to their entrance into business and political life. During the past six months eighty-eight boys and 137 girls have committed suicide, an increase of fifty over last year's report for the same period. Boys most frequently use a gun and girls take poison. These facts, the report points out, call for strictly enforced laws to suppress the sale of firearms and poisons.

LATIN AMERICA

Brazil Extends Medical Facilities to Paraguay.—The government of Brazil has extended the facilities of Brazilian laboratories and clinics to the physicians and medical students of Paraguay.

Uruguayan Commissioner in the United States.—Dr. Francisco Torres Insargarat, special commissioner of the government of Uruguay, is now visiting the most important cities of the United States, including Chicago.

Pavilions for Steerage Passengers.—The National Board of Public Health of Uruguay has been authorized to build several pavilions for steerage passengers in the lazaretto on the Island of Flores at an estimated cost of $25,000 pesos (about $10,000).

Rockefeller Mission in Brazil.—The *Brasil Medico* states that Drs. Rose and Hackett of the Rockefeller mission to Brazil were given a rousing welcome on their recent arrival at Bello Horizonte. The entire faculdade de medicina and other local members of the profession were at the depot to meet them.

Personal.—Drs. O. de Oliveira and Carvalho Azevedo of the faculdade de medicina of Rio de Janeiro recently left for Europe.——Dr. A. Lindenberg and Dr. O. de Sousa have returned from Europe. The latter was on a special commission from the Rio faculdade de medicina and will resume his course on physiology.

New Clinic in Uruguay.—There have just been installed in the Hospital Militar Central, Montevideo, a gynecologic clinic and a polyclinic for the treatment of children's diseases. Dr. Eduardo Blanco Acevedo, director of the surgical service, will be in charge of the clinic and Dr. Nieto Zervino in charge of the polyclinic.

Public Health Board at Guatemala.—The president of Guatemala has appointed the following members of the Superior Board of Public Health: Dr. Alberto Padilla, Dr. Mario J. Wunderlich, Dr. Antonio G. Valdaevellano; Licdo. Héctor Aparicio, Licdo. Juan F. Melgar, Dr. Guillermo Cruz, and Ingeniero Félix Castillo. There has also been organized a public health police under the orders of the board.

FOREIGN

Appropriations for Research on Tuberculosis.—The Robert Koch endowment at Berlin has granted Professor Flügge of Berlin 15,000 marks and Professor Selter of Königsberg 6,000 marks to aid in continuing their research on tuberculosis.

Institute for Research on Proteins.—A sum of 500,000 marks has been donated to the University of Heidelberg to

found an institute for research on albumins. It is to be in charge of Professor Kossel, and to be affiliated with the Institute for Hygiene.

Prize for Work on Orthopedics.—Owing to a recent legacy from Dr. P. Redard of Paris, the Académie de médecine offers a prize of 5,000 francs every fifth year for the best work on orthopedic surgery. Competition is open to physicians of all countries and to interns of the Paris hospitals.

Faure's Hymn to Peace.—The Paris *Figaro* offered a prize for a hymn to peace, and had the best six, among the seventy submitted, set to music. The one selected by Saint-Saëns for his musical setting proves to be the work of Prof. J. L. Faure, the successor of Pozzi in the chair of gynecology in the Paris Faculté de médecine.

Cambridge Gives Americans Degrees.—Prof. John Jacob Abel, professor of pharmacology in Johns Hopkins Medical School, Baltimore, and Dr. Harvey Cushing, professor of surgery in Harvard University Medical School, Boston, had conferred on them the honorary degree of Doctor of Laws by Cambridge University, July 29.

Outings for German Children in Denmark.—The *Deutsche medizinische Wochenschrift* states that 8,000 German children have been given hospitality in Denmark since last October; one institution took 500. About half the total were children of the laboring classes. Each child was given a short outing, new clothes and foodstuffs to bring home to an average weight of 15 kg.

Memorial to Van Engelen.—A tablet on the wall of the Saint-Pierre Hospital at Brussels was recently unveiled with much ceremony in honor of the eminent surgeon, Van Engelen, who died in 1918. The funds collected for the purpose proved sufficient to found in addition an annual prize for an intern in the surgical service, to be awarded in the form of books and instruments.

International Anthropology Institute.—In the second week of September there is to be a gathering at the Ecole d'anthropologie at Paris of a number of persons interested in making this the international center for the anthropologic sciences, including ethnology, eugenics, medical geography, comparative anatomy, etc. Those interested in the matter are asked to send in their names to the secrétariat, Ecole d'anthropologie, rue de l'Ecole-de-médecine, 15, Paris.

Vital Statistics in Spain.—The *Siglo médico* states that 306,394 boys were born in Spain during 1919, and 278,958 girl babies, to a population of 20,355,986. Over 482,000 deaths were recorded, including 163,198 children under 5. Typhoid was responsible for 5,677 deaths, typhus for 228, tuberculosis for 29,700, cancer for 12,525 and heart disease for 37,883, acute bronchitis for 22,166, and chronic bronchitis for 11,705, suicide for 847, and other forms of violence for 6,909.

Medical Work in Palestine.—Medical work in Palestine has advanced rapidly during the past two years stimulated by the physicians and nurses of the American Zionist Medical Unit. Clinics are being held and lectures given at regular intervals. The hospitals and clinics established by the unit in Palestine will be eventually taken over by the Medical College of the Hebrew University, Jerusalem, plans for which are being designed by Prof. Patrick Geddes of the University of Edinburgh.

Monument in Memory of Brissaud.—It is proposed to erect a memorial at Tournai in Belgium to honor the memory of Brissaud who was the first to locate and describe cataract correctly; he thus paved the way for Daviel's extraction. Many leading ophthalmologists of Belgium and France are on the committee in charge of the matter, and appeals are being made for subscriptions which can be sent to the secretary, Professor Terrien, 41, rue Pierre-Charron, Paris, or to any member of the committee.

Memorial to Lannelongue.—A monument to Lannelongue was dedicated in July in his natal town, Verduzan, representatives from the government and scientific societies having charge of the ceremony. One report of the ceremonies adds that his name is perpetuated otherwise by prizes in various scientific organizations, museums he founded, and the numerour works he published on the pathology of the bones, etc., and by the influence he exerted in parliament and as president of different organizations, until his death in 1911.

Malaria in Italian Soldiers.—Representatives of the government departments, of the Red Cross, and others recently conferred and adopted a plan for systematic treatment of the demobilized soldiers in Italy who are still suffering from malaria. A census throughout the country of all such cases is to be taken, and provisions made for treatment at home or in four sanatoriums to be organized in various mountain regions. While the man is staying at the sanatorium, his family is to be paid a certain daily allowance. Vigorous propaganda is now under way to convince the men of the necessity for taking treatment.

The Weekly Cinematophotograph.—A new Paris medical weekly has made its appearance, the *Vie médicale*, which seeks to photograph or, as it says, to cinematophotograph in words, in journalistic style, the happenings of the week in medical circles, like a daily paper. The first issue has thirty-two pages, and contains among other things two comprehensive articles on lethargic encephalitis and comparative human and veterinary medicine. The report of the meetings of the Académie de médecine is written in breezy style by a girl medical student. The *Vie médicale* is issued 48 rue Geoffroy, St. Hilaire 49, Paris, for 25 francs a year. Drs. Aloncle and L. Nass are the director and editor, respectively.

Deaths in Other Countries

Dr. **A. Antonelli,** a prominent Italian ophthalmologist long resident at Paris.——Dr. **C. F. I. von Wahlberg,** a leader in the organization of the profession in Finland, aged 72. Since retirement from practice he has published several novels and dramas.——Dr. **O. Schultze,** professor of anatomy and embryology at the University of Würzburg, aged 61.——Dr. **O. S. Dastugue,** subdirector of the Institute of Physiotherapy at Buenos Aires and assistant professor of radiology in the medical school, aged 30.——Dr. **J. E. García** of Buenos Aires.——Dr. **E. Lombard,** an otologist of Paris.——**Ethel Amy Mordaunt,** Bromley, Kent, England, L.R.C.P., L.R.C.S., Edinburgh, 1908, L.F.P.S., Glasgow, 1908, was struck and killed by a motor scooter in Bromley, recently.——Dr. **Armand Gautier,** formerly professor of chemistry and physiology at the University of Paris, president of the Académie de médecine and of the Académie des sciences, and author of numerous works on chemistry and especially on the therapeutic use of arsenic, aged 83.——Dr. **J. S. Dauriac,** a well known surgeon of Paris whose latest work, "Chirurgie réparatrice des os," had just gone to the printer at the time of his death.——Dr. **C. S. Rodrigues** of Buenos Aires.——Dr. **J. da Costa Lima e Castro,** professor of surgery in the University of Rio de Janeiro, aged 62.——Drs. **Bemfica de Menezes** and **A. Pinheiro,** both of Rio de Janeiro.

Government Services

Conference on Venereal Diseases

An All-American Conference on Venereal Diseases will be held in Washington, D. C., Dec. 6-15, 1920, under the auspices of the U. S. Public Health Service. Dr. William H. Welch has been nominated secretary of the conference.

Enlargement of War Risk Hospital

Alterations and additions at the United States hospital at Perryville, Md., will enable the Public Health Service to care for approximately 250 additional patients under the war risk act. The hospital has accommodations for more than 1,000 patients and will be limited to cases of psychoneurosis.

Course for Health Officers

The U. S. Public Health Service, in cooperation with Georgia state authorities, has established a course of instruction in health work at the University of Georgia Medical School, Augusta. The course is designed to give special training to county health officials of the state and an instructor from the Public Health Service will occupy the chair throughout the term.

Shortage of Chemicals for Water Purification

At the urgent request of the Public Health Service the commission on car service of the American Railroad Association has relieved the shortage of the aluminum phosphate, bauxite, chlorin, calcium hypochlorite, soda ash, copperas, lime, and other chemicals used for the purification of water at municipal water plants. The health of millions of people was threatened by a scarcity of these materials at filtraton plants, due to the failure of the railroads to furnish sufficient cars to the manufacturers.

Plague Prevention Measures

Surg.-Gen. Hugh S. Cumming of the U. S. Public Health Service, after his return from a plague conference at Galveston, Texas, declared that there has been no spread of plague to other gulf ports and that on investigation two suspicious cases in Mississippi and Texas had been proved not to be plague. At the request of local health authorities, rat surveys will be conducted by the Public Health Service in Charleston, S. C., and in Florida and Texas seaports. Plans for radical changes in the construction of business buildings, dwellings and wharves are being drawn up as part of a nation-wide campaign for rat extermination, following recommendations of the health officers in attendance on the conference to study bubonic plague and rat extermination. The specifications will be furnished to the different states and cities in order that they may be incorporated in the building codes throughout the country.

Hospital Service of the Bureau of War Risk Insurance

In the Sundry Civil Bill, which carried appropriations of $46,000,000 for medical and hospital services for beneficiaries of the Bureau of War Risk Insurance, authority was granted to make the necessary expenditures for converting soldiers' homes into hospitals for war risk insurance patients. At a conference between Gen. Leonard Wood, president of the board of managers of the National Homes for Disabled Volunteer Soldiers, Dr. T. W. Salmon, representing the Mental Hygiene Committee, Dr. H. A. Pattison, representing the National Tuberculosis Association, and R. G. Cholmeley-Jones, director of the Bureau of War Risk Insurance, it was decided to convert two of the soldiers' homes for the exclusive treatment of tuberculosis, and one for the exclusive treatment of mental diseases; each of these hospitals will accommodate 1,000 patients. There are now 17,625 war risk insurance patients in hospitals; 7,980 of these are in Public Health Service hospitals, and 9,645 in about 900 hospitals and institutions not under control of the government. It is estimated that by June 30, 1921, approximately 30,000 war risk patients will be under treatment in hospitals. Existing facilities of the War Department will provide for 4,000, the soldiers' homes will accommodate 6,000, and the Navy Department hospitals can make provision for 4,000. Approximately 15,000 beds are already under control of the Public Health Service, and there will therefore be accommodations for 29,000 patients in hospitals owned and operated by the government.

HONORABLE DISCHARGES, MEDICAL CORPS, U. S. ARMY

NOTE.—In the following list L. signifies lieutenant; C., captain; M., major; L. C., lieutenant-colonel, and Col., colonel.

CALIFORNIA
Alameda—Moore, L. O. W. (L.)
Sacramento—Munger, A. L. (C.)
San Francisco—Ross, C. C. (L.)

GEORGIA
Decatur—Pitman, J. F. (C.)

ILLINOIS
Chicago—Seifert, E. H. (L.)
Odell—Shankland, J. W. (C.)

INDIANA
Salem—Bierach, J. L. (C.)

KENTUCKY
Holland—White, J. W. (L.)

LOUISIANA
New Orleans—Ney, E. W. (M.)

MICHIGAN
Lansing—Barber, C. L. (C.)
St. Johns—Buck, R. C. (C.)

MINNESOTA
Cloquet—Guittard, V. D. (C.)

MISSISSIPPI
Falkner—Pearce, R. S. (L.)

MISSOURI
Boonville—Lyle, C. F. (L.)
Kansas City—Field, A. C. (L.)

NEBRASKA
Omaha—Davis, A. L. (C.)

NEW JERSEY
Trenton—Denelsbeck, J. G. (L.)

NEW YORK
Amagansett—Babcock, H. E. (M.)
Gloversville—Ward, L. J. (C.)
Little Fall—McGillicuddy, J. G. (L.)
New York—Healy, M. F. (C.)
Rovitti, P. (L.)
Sharlit, H. (L.)
Toomey, J. H. (L.)
Syracuse—Reid, C. D., Jr. (L.)

OHIO
Dayton—Bayless, C. O. (C.)
Plymouth—Holtz, J. F. (L.)

PENNSYLVANIA
Butler—Ketterer, C. H. (C.)
Meadville—Rosenberger, A. I. (L.)
Philadelphia—John, R. L. (M.)

SOUTH CAROLINA
Cross Hill—Klugh, G. F. (C.)
Spartanburg—Myers, D. V. (L.)

TENNESSEE
Memphis—Baldwin, W. H. (M.)
Oliver Springs—Shelton, W. A. (C.)
Paris—Wiggins, M. C. (L.)

TEXAS
Dallas—Mathewson, E. H. (M.)

WASHINGTON
Sedro-Wooley—Hehir, J. (C.)

WEST VIRGINIA
Elizabeth—Brown, C. N. (C.)
Spencer—McQuain, J. E. (C.)

Foreign Letters

PARIS

(*From Our Regular Correspondent*)

July 20, 1920.

International Congress of Surgery

The International Surgical Society at its last general assembly, just ended, decided to hold its next international congress at London, July, 1923, under presidency of Professor Macewen, Glasgow. It was voted to continue to exclude the surgeons of the central empires. The International Surgical Society was founded in 1902 through the initiative of the Société belge de chirurgie, and includes about 700 members. It has held five congresses, the first three of which met in Brussels under presidency of Lucas-Championnière in 1905, Kocher in 1908 and Czerny in 1911. The fourth congress was held in New York under presidency of Professor Depage, and the last was just held in Paris under presidency of Dr. W. W. Keen.

The Paris Surgical Society

The Société des chirurgiens de Paris, which hitherto has admitted to membership only the professional surgeons, voted to admit associated members chosen from among physicians who are practicing related specialties or are working in fields which have contributed to the evolution of surgery. The resolution is inspired by a desire for collaboration with the pathologists, bacteriologists, chemists, physiologists, physiotherapists, radiologists and radiumtherapists in particular, and in general with all physicians whose work might be of benefit to the science of surgery.

Death of Gautier

Dr. Armand Gautier, onetime professor of chemistry at the Paris medical faculty, died recently at Cannes. Armand Gautier was born Sept. 23, 1837, at Narbonne, received a scientific and medical education at Montpéllier, and graduated M.D., at Paris in 1862. He was a student of Wurtz, under whom he became professor agrégé in 1869, and succeeded his teacher in the chair of chemistry fifteen years later. In 1879 he was elected a member of the Académie de médecine and of the Académie des sciences ten years later.

Gautier was one of the greatest of modern chemists. His researches on ptomains, discovered by him in 1873, and on alkaloids of bacterial origin, and his discovery of alkaloids from animal tissues, or leukomains, won him a reputation in scientific medicine. On the other hand, his experiments with organic compounds of arsenic led to the practice of subcutaneous injections of sodium cacodylate.

Gautier's most important works are his *Cours de chimie minérale et organique* (1895), *Les toxines microbiennes et animales* (1896), *Leçons de chimie biologique normale et pathologique* (1897), and *L'alimentation et les régimes chez l'homme sain et chez les malades* (1904).

Appreciation of the American Activities Against Tuberculosis

Several months ago I mentioned in these pages (THE JOURNAL, May 8, 1920, p. 1339) the recognition given by the Académie de médecine de Paris on the motion of Professor Letulle, to the activities of the American Red Cross in the campaign against tuberculosis in France during the war. In turn, the Académie royale de médecine de Belgique has also devoted its attention to this subject. M. Sand, in laying before the Academy the report of the Rockefeller Commission for the Prevention of Tuberculosis in France, called special attention to the importance of the demonstrations which, at the invitation of the Ligue belge contre la tuber-

culose, the Rockefeller Commission has been making in Belgium. At Tournai, Namur and Huy, these took the form of a seven day propaganda against tuberculosis. Dr. Linsly R. Williams, director of the commission, Major Stuart, director of propaganda, and Miss F. Elizabeth Crowell, superintendent of visiting nurses, came to Brussels not only for the purpose of conducting a popular campaign but also to demonstrate to a selected public the organization, working methods and practical achievements of the commission. M. Sand found the commission's methods admirably adapted to the popular mentality. They include meetings, the "guignol," moving pictures, postcards, posters and pamphlets. They reach the children, mothers, workers, soldiers, the general public, civil, military, school and ecclesiastic authorities. Everywhere the commission leaves behind a tuberculosis dispensary as a permanent trace of its tour.

The nucleus of the organization is American and it is financed by the Rockefeller Foundation of New York; the consultants, however, are French, and the commission, as soon as its work is finished, commits it to the hands of local committees. Its activities started about three years ago, and in that time it has covered thirty-three departments of France.

Dr. Bordet, director of the Pasteur Institute of Brussels, who has also assisted at the demonstrations of the Rockefeller Commission, thinks that Americans have found the necessary means of making the masses comprehend. He likewise proposed that the Academy put itself on record in favor of a similar organization in Belgium.

LONDON

(From Our Regular Correspondent)

July 30, 1920.

Panel Physicians' Records

The ministry of health has been considering the form in which panel physicians' records should be kept, and has consulted Sir James Mackenzie on the point. He has submitted a characteristic memorandum in which he declares that legislation founded on such statistics as are available today would fail for the reason that, apart from slight affections, such as toothache, from 90 to 95 per cent. of the complaints which the panel physician sees are undiagnosable even by the most experienced, and most of the small percentage that are diagnosed according to present methods would fail to convey an accurate notion of the real nature of the illness. He outlines what he conceives to be the defects in medical knowledge at the present day.

Our present classification of disease in the living is based "upon the morbid anatomy of the dead," and the idea has sprung up in consequence that ailments can be classified according to gross structural changes such as can be seen postmortem. Vast numbers of patients, however, have ailments that cannot be so classified—there is as yet no structural change. Their signs of disease are distressful sensations. Then comes the error: the physician is likely "to take the most prominent symptom or sensation and consider it to be the disease," for example, "neuralgia, dyspepsia, anemia, palpitation, neurasthenia." The truth is that there are always in these cases other symptoms, and when these symptoms are gathered together they are found to show a disturbance of so many different organs that the conclusion is forced that there is a common cause which upsets the balance of the different organs. In consequence, the physician should not be forced to "give a name" to each disease but should keep records that will enable these symptoms to be related one to another and the real underlying diseases to be found. For this purpose index cards are suggested. We spend vast sums on drugs, and yet "there is no accurate knowledge as to the effect of a great many remedies." Moreover, if symptoms of disease, and not diseases themselves, are treated, further waste must occur. Special investigators should study in actual practice the drugs most in vogue, and make known their findings regarding action and uses. Thus a new era in medical treatment would open. To remedy these defects, the physician must be taught how to carry on research into the early symptoms of disease. If there was a scheme by which he could learn how to question a patient intelligently, how to make short but accurate notes, how to watch the patient as he passes from one phase of disease to another, the working of the insurance act would be greatly facilitated year by year, while a great impetus would be given to the investigation of these dark fields of medicine which only the general practitioner can explore.

A committee appointed by the minister of health to report on note taking by panel physicians, and presided over by Sir Humphry Rolleston, has also issued its findings. These are to a great extent in sympathy with Sir James' views. An envelop, it is advised, should be issued to each physician in respect of each insured person on his list. This should bear, when it reaches the physician, the patient's name, address, society, number, the physician's name, the committee's cipher, and the date. There should be different colors in use for female and male. Thus, on visiting the patient the physician will merely require to make a few notes on the envelop, e. g., date of visit, age, etc. The "notes" should be written first on the backs of the envelops and then on cards to go inside the envelop. These should be such as "are likely to be of value to the physician himself, or to any other physician treating the same patient in subsequent illnesses." The physician will thus be able to describe fully the symptoms he sees, and the cards will form in time a full record of each patient's health without being at all irksome to the busiest physician.

The Lister Memorial Fund

The general committee of the Lister memorial fund has received the report of the executive committee appointed in 1912. The subscriptions from the British Empire and foreign countries amounted to $59,230. A memorial tablet by Sir Thomas Brock was unveiled in Westminster Abbey, Nov. 1, 1915, and steps are being taken for the erection of a monument in a public place in London. In order to carry out the scheme adopted in 1912 for the establishment of the international Lister memorial fund, the following proposals were adopted: 1. That $2,500 out of the general fund, with a bronze medal, be awarded every three years, irrespective of nationality, in recognition of distinguished contributions to surgical science, the recipient being required to give an address in London under the auspices of the Royal College of Surgeons. 2. That the award be made by a committee constituted of two members nominated by the Royal Society, two by the Royal College of Surgeons of England, one by the Royal College of Surgeons in Ireland, one by the University of Edinburgh, and one by the University of Glasgow. 3. That any surplus income of the general fund, after providing for the erection of a monument, and after defraying administrative expenses, be either devoted to the furtherance of surgical science by means of grants or be invested to increase the capital of the fund. The continued carrying out of this scheme in future years will require the provision of some permanent and adequate machinery, as the Lister memorial committee cannot, in view of its constitution, be itself permanent. The committee, having ascertained that the Royal College of Surgeons of England would be prepared to become the trustees and administrators of the fund and to carry out its objects, authorized the executive committee to take the necessary steps to give effect to this arrangement.

War Memento from British to American Surgeons

As a memento of the work done in cooperation by American and British surgeons during the war, a number of the latter have had made a silver-gilt mace, which is to be presented to the American College of Surgeons. The gift is the suggestion of Sir Berkeley Moynihan, with whom Sir Anthony Bowlby (president of the Royal College of Surgeons) and Sir D'Arcy Power collaborated. The mace is the work of a well known worker in metal, Mr. Omar Ramsden. A surgeon's mortar dug up in a Saloniki trench was the model for the head, which is surrounded by maple leaves and American eagles. The badges of the British and American Army Medical Corps and the serpents of Esculapius are prominent, the name of Philip Syng, the father of American surgery (who was at St. George's Hospital before he went across the Atlantic), is introduced, and the roll of subscribers will be engraved in due course. An inscription on the mace reads: "From the consulting surgeons of the British Armies to the American College of Surgeons in memory of mutual work and good fellowship in the Great War."

BELGIUM

(From Our Regular Correspondent)

July 28, 1920.

Child Welfare

Under a law passed Sept. 5, 1919, all agencies and interests devoted to child hygiene which were formerly the exclusive object of private charity are incorported in the newly established Oeuvre nationale de l'enfance. These charities have been extending over Belgium for some years, and the war gave even greater impetus to the movement. At the time of the armistice there were infant clinics in about 800 towns and there were numerous maternity canteens; school lunches were being distributed to more than 1,000,000 children, and there were eighty-five colonies in which from 5,000 to 6,000 debilitated children were received in each month.

Minister Jáspar, who recently presided at the opening session of the Conseil supérieur des oeuvres de l'enfance, recalled the favorable results already attained by past activities and outlined the great projects which still await execution. The Oeuvre nationale, such as it is, was conceived by the legislature for the sole purpose, at present, of protecting the younger children by the establishment of infant clinics, maternity canteens, colonies for debilitated children, school lunches and milk stations (gouttes de lait). But this does not mean that its sphere will be limited to these activities. It will have to pass on the establishment of all additional related activities; it will determine especially, as brought to light by the report on the last budget of the Ministry of Economic Affairs, whether besides the maternity canteens there is urgent need of other organizations for the protection of mothers and infants.

The infant clinics are the cornerstone of the whole structure, and more than 800 have been established to date. It is necessary that all infants of the country, and especially those whose parents do not have the means to pay for medical services, should be brought to these clinics in the first months of life.

The maternity canteens will perhaps be attached to coal mines and to other industries employing women, in short, they will be installed wherever proximity to the work of husband or wife gives reason to anticipate that they will be serviceable.

During the war, school lunches were introduced in all the communes of the country, in other words, in all the schools. Thanks to the patriotism of our fellow citizens we did not see a recrudescence of the old school quarrel during that time. Under the Conseil supérieur it should not be revived in the days of peace, and to obviate this, absolute separation of the teaching function from the question of feeding is necessary.

The colonies for debilitated children have already obtained brilliant results. Not only that 10,000 children of the cities and industrial centers, thanks to these colonies and to the generosity of property owners who loaned more than eighty chateaux and houses for the work, were able to spend several months in the open air and to recuperate from their aggravated undernourishment. The average gain of each of these children was from 2 to 3 kilograms. The work of the colonies also contributed greatly to prevent the terrible increase in tuberculosis from affecting the younger generation. It is self-evident that it will be impossible in times of peace to maintain the colonies on the same extensive basis, but it is certainly equally indispensable to give children of all ages from the side streets and alleys an opportunity to go to the country or the seashore. Because of this the system inaugurated, by which the colonies will remain open all year round, seems most favorable.

Federated Biologic Societies

A federation of the Réunions biologiques affiliated with the Société de biologie de Paris was recently formed in the laboratory of Professor Brachet at the Institut anatomique du Parc Leopold. The réunions of Brussels, Lille, Lyons, Nancy, Strasbourg, Bucarest and Copenhagen were represented, and the secretary general of the Société de biologie also attended. Professor Bordet, president of the Réunion biologique de Bruselles, declined the presidency in deference to Professor Bard of Strasbourg. The next meeting is scheduled at Strasbourg in the autumn of 1921.

BUENOS AIRES

(From Our Regular Correspondent)

June 30, 1920.

Lethargic Encephalitis

In a short time there have been observed quite a number of isolated cases of lethargic encephalitis. In some of the Buenos Aires clinics three and four cases have been treated. There have been cases in different towns as far as Salta, which is in the northernmost part of the country. The Argentine Medical Association at its last meeting discussed four cases of the disease presented by Drs. J. Destefano, A. Vitón, S. Dessy, F. Grappiolo, T. Martini and J, Berterini. A few days afterward several cases were also reported before the Society of Pediatrics.

Argentine Medical Association

This association, which includes the majority of the medical societies of Buenos Aires, has decided to increase the number of affiliated societies. So far during this year the societies of biology, medicine and surgery have operated successfully.

Pneumoperitoneum

In the medical section of the Argentine Medical Association there have been presented several papers on the application of pneumoperitoneum to the roentgen-ray diagnosis of abdominal diseases. This method has become popular in several hospitals.

Centenary of the Academy of Medicine

The Academy of Medicine of Buenos Aires has decided to celebrate its first centenary in 1922 with a contest on medicine and allied sciences. Three prizes will be granted for the best papers presented; the first of 5,000 pesos and a gold medal, the second 3,000 pesos and a silver medal and the third 1,000 pesos and a diploma. (A peso is now worth about 40 cents). The academy has announced its purpose of increasing its activities, for so far this association, formed by

fourteen members, has shown little life. Some scientific lectures are planned for the near future, and one has already been given. The academy has asked the government to furnish it with a building of its own.

Institute of Surgery

There is now pending in congress an appropriation to furnish with the necessary facilities the chair of clinical surgery. The school of medicine has under consideration the creation of an institute of surgery.

Meeting of the Argentine Medical Association

The Argentine Medical Association has decided to hold a congress on internal medicine next October. The subject to be discussed will be "Cranial Hypertension."

Titration

Dr. A. Sordelli announces that antidysenteric toxins and serums may be titrated quite accurately with birds as controls.

BERLIN

(From Our Regular Correspondent)

July 15, 1920.

Germany's Food Problem

A memorandum of the national ministry of food and agriculture gives a survey of the food problem of Germany. Because of the extraordinary difficulties during the war and the shortage of labor and fertilizer, the acreage of the most important foodstuffs, such as bread cereals, potatoes and sugar beets, has been greatly reduced and the average yield has simultaneously declined. From 1913 to 1919, the harvest yield per hectare (2.47 acres) of bread cereals decreased 21 per cent., of feeding grains, 25 per cent., of potatoes, 31 per cent., and sugar beets 30 per cent. With the reduced boundaries, Germany's production of bread grains dropped from 13,300,000 tons in 1913 to 8,500,000 tons in 1919, potatoes from 40,300,000 to 21,400,000 tons, and sugar beets from 12,900,000 to 5,800,000 tons. An especially serious complication is the fact that by the loss of productive agricultural sections, especially in the east, Germany is deprived of a considerable food surplus. The number of cattle fell off from 18,000,000 in 1913 to 16,500,000 in 1919, milch cows from 9,100,000 to 7,600,000, hogs from 18,500,000 to 11,500,000, all told, not less than 41 per cent. The average yearly milk yield fell from 2,700 to 1,200 liters, and the total milk production declined from twenty-four to nine billions of liters, while the slaughtering weight of cattle, sheep and hogs dropped as much as 50 per cent. Germany is therefore compelled to continue the rationing of some of the most necessary foods and these rations have been reduced to such an extent that they represent only about one half of the minimum calory requirement of an adult man. Since the country is not yet in position to import the required foods to make up the deficit, the population as a whole is still in a state of undernutrition, a condition which has entailed terrible sacrifices. On the one hand, the growing generation is being sapped of its strength, while on the other hand, the adult populace is unable to regain its full working strength. As a result it is impossible to speed production in the mines and industries. The miners especially have complained repeatedly regarding the insufficient diet, laying particular emphasis on the fact that the bread is made of as high as 80 per cent. filler. The present industrial conditions make it impossible for a growing element of the populace to pay for even the small allowance of food at the reduced prices established by the government. The weekly ration at the present, for instance, consists of legumes, sugar, marmalade and artificial honey, with a calory value of 12,600, but it costs 101 marks as compared to 7.77 marks six years ago. The import requirements of Germany in the next fiscal year will total 2,000,000 tons of bread grains, the same quantity of feeding grains, 750,000 tons of oil seeds, 180,000 tons of meat and bacon, 144,000 tons of fats, 500,000 tons of fish, 500,000 tons of phosphate rock and 350,000 tons of pyrites, with a money value, all told, of 3,403,600,000 gold marks.

The Conflict Between Physicians and Krankenkassen

At a meeting between representatives of the physicians and the krankenkassen, June 4, an agreement was virtually reached, according to which medical arrangements are to be left to free agreements between the krankenkassen and individual physicians or medical societies. Where the free choice of physicians is already in practice, this system must be maintained, provided it does not endanger the existence of the kasse. Under this scheme an insured patient can consult virtually any qualified physician. In rural communities a patient may call the nearest physician, and may call an additional qualified physician in consultation, provided he assumes the extra cost. Payments for services rendered are to be made by the kasse direct, the attending physician's fee for office visits being 4 marks, and for home visits, 6 marks. For other services, the minimum stipulation of the projected revision of the official Prussian fee scale shall apply. Until this is published, a 15 per cent. increase shall be added over the prevailing scale, except in obstetric cases, in which the increase shall be 400 per cent. Lump sum payments shall be subject to local agreement, and in occupied territory an additional increase is granted. The new fees are effective as of April 1, 1920. Travel allowances, which would include compensation for the loss of time as well as actual traveling expenses, shall be 6 marks for every two kilometers by day and 10 marks by night. If the physician is furnished the means of travel, he shall be compensated for the loss of time at the rate of 2 marks for 2 kilometers by day and 4 marks by night. To supplement and improve the medical treatment and to advance the interests of public welfare the kassen are authorized to establish diagnostic, consulting and dispensary clinics and physiotherapeutic and medicomechanic institutes. These shall be placed at the free disposal of the insured members and their dependents. In the future, disputes between the kassen and physicians shall be settled by courts of arbitration subject to appeal to superior courts, the definite establishment of which will follow after supplementary agreement.

Depending on local agreements, certain exceptions are incorporated in the general arrangement. In Berlin, for instance, the system of free choice of the attending physician will be introduced throughout. Beginning with April 1, 1920, the quarterly capitation fee is fixed at 7.50 marks, with an additional 2.5 marks in the first quarter. While the fee scale applies only for 1920, the other provisions will be valid for five years. Subsequent conferences shall determine the procedure regarding any matters still in dispute. General free choice of physicians shall go in effect as soon as the necessary administrative arrangements have been made. The parties to the agreement are in accord on one point, that if any kasse does not introduce the new system, its physicians shall be excluded from obtaining any benefits from other kassen operating under the new system. In Wurttemberg and some other states special agreements have been made between physicians and kassen; some of these are more favorable than that which has been arranged for the whole country. Although the physicians did not obtain all their demands there is considerable cause for satisfaction over the terms. One particularly happy feature is the apparent willingness of the krankenkassen to settle the questions relating to the medical care of its members in an amicable manner rather than to seek a quarrel at every opportunity.

Marriages

BERTRAM GROESBECK, JR., Lieut., M. C., U. S. Navy, to Miss Maria Commelas Canals, at San Francisco de Macoris, Dominican Republic, June 19.

LOUIS G. MARTIN, Capt., M. C., U. S. Army, Camp Gordon, Ga., to Miss Caroline Douglas Oden, in New York City, August 2.

ABRAHAM MATTES to Miss Henrietta D. Pearlstine, both of Charleston, S. C., in New York City, July 27.

ERNEST E. PARKER, Oxford, Ind., to Miss Mary Francis Kennedy of Templeton, Ind., at Oxford, July 26.

EARL D. JONES, Roberts, Idaho, to Miss Bessie May Badley of Wichita, Kan., August 6.

ALBERT J. WITTSON to Mrs Mabelle Lindley Burras, both of New York City, August 6.

L. FORREST SWANK to Miss Mary Coryell, both of Indianapolis, July 31.

Deaths

Louis Joseph Dandurant, St. Joseph, Mo.; Central Medical College of St. Joseph, Mo., 1898; aged 45; a specialist in surgery; president of the Buchanan County Medical Society; captain, M. C., U. S. Army, and discharged Dec. 5, 1918; professor of materia medica and pharmacology in Ensworth-Central Medical College, St. Joseph; a member of the local board of health; was drowned in the Missouri River, near Bean Lake, August 1, when his automobile plunged through a washout into the river.

Daniel Clark Jones, St. Louis; Rush Medical College, 1863; Medical College of Ohio, Cincinnati, 1866; aged 82; once mayor of Topeka, Kan.; surgeon-general of Kansas and president of the state board of health; surgeon of the Second Illinois Cavalry during the Civil War, and for eighteen years chief surgeon of the National Homes for Disabled Volunteer Soldiers at Leavenworth, Kan., and Danville, Ill.; died at the home of his daughter, July 27.

Benjamin George Pool, Washington, D. C.; George Washington University, Washington, D. C., 1879; aged 65; a member of the Medical Society of the District of Columbia, and the Association of Military Surgeons of the United States; surgeon of the Fourth Battalion, D. C. N. G., for many years; died at the home of his daughter in Washington, May 25, from myocarditis.

Olga Davis, Chicago; College of Physicians and Surgeons, Chicago, 1909; aged 45; a speciaist in diseases of children, and for many years a member of the staff of the Emanuel Mandel Memorial Dispensary of Michael Reese Hospital; died at Mackinac Island, Mich., August 9, from heart disease, a month after an operation for disease of the gallbladder.

Matthew Joseph Hoey, P. A. Surg., U. S. P. H. S. reserve, San Francisco; College of Physicians and Surgeons, San Francisco, 1905; aged 38; for nine years in the service of the Panama Canal Zone, and quarantine officer at Balboa for six years; died in the U. S. Marine Hospital, San Francisco, August 1, from acute parenchymatous nephritis.

Harold Lee Meierhof, New York City; Columbia University, College of Physicians and Surgeons, New York City, 1917; aged 26; Lieut., M. C., U. S. Army, and discharged Jan. 11, 1919; an intern at Mt. Sinai Hospital, New York City; died in that institution, August 5.

Charles Henry Althaus, Brooklyn; University of the City of New York, 1881; aged 83; surgeon of the Fifty-Second New York Volunteer Infantry during the Civil War; a practitioner and druggist for more than sixty years; died in Bellevue Hospital, August 4.

Norman Perkins Quint, West Medway, Mass.; Harvard University Medical School, 1870; aged 73; a member of the Massachusetts Medical Society; medical examiner (coroner) of the Seventh Norfolk District for twenty years; died in a hospital in Boston, July 27.

Arthur Lloyd Jones ● Lima, Ohio; Fort Wayne (Ind.) College of Medicine, 1897; aged 48; captain, M. R. C., U. S. Army, and discharged July 30, 1919; for fourteen years health officer of Lima; died, near Jackson Center, Ohio, July 25, from angina pectoris.

● Indicates "Fellow" of the American Medical Association.

Lynn Ransom Palmer, New York City; Columbia University College of Physicians and Surgeons, New York City, 1903; aged 40; a member of the Medical Society of the State of New York; died at Old Forge, N. Y., July 23, from tuberculosis.

Laura Ann Cleophas Hughes, Boston; Tufts College Medical School, Boston, 1895; aged 60; a member of the Massachusetts Medical Society; a specialist in public health; died in the House of the Good Samaritan, Roxbury, Boston, July 30.

Howard Lankester, St. Paul (license, Minnesota State Board of Medical Examiners, 1883); aged 74; commissioner of health of St. Paul from 1910 to 1914; died in Columbia Hospital, Milwaukee, July 30, from diabetes.

Carey M. Klyne, Youngstown, Ohio; Eclectic Medical Institute, Cincinnati, 1894; aged 48; for two terms coroner of Mahoning County; was drowned while bathing at Milton Lake, near Youngstown, July 25.

Harvey Vickard Murray, Honolulu, Hawaii; University of the City of New York, 1891; aged 53; a member and once president of the Medical Society of Hawaii; died in San Francisco, recently.

Thomas Jackson Charlton ● Savannah, Ga.; Bellevue Hospital Medical College, 1885; aged 56; for many years superintendent of the Savannah Hospital; died, July 25.

James S. Bell, Oak Park, Ill.; Homeopathic Medical College of the State of New York, New York City, 1866; aged 79; died, August 8, from senile debility.

Arthur Birch Lockridge, Danville, Ill.; Indiana Medical College, Indianapolis, 1906; aged 41; died at the home of his parents in Greencastle, Ind., August 1.

Isadore Mayor Joseph Kane, Chicago; Loyola University, Chicago, 1920; aged 29; died in Mercy Hospital, Chicago, August 1, from general peritonitis.

Maria Brown Averill, San Diego, Calif.; Hahnemann Medical College of the Pacific, San Francisco, 1889; aged 85; also a pharmacist; died, July 7.

Benjamin M. Sherwood, Bicknell, Ind.; Missouri Medical College, St. Louis, 1889; aged 64; died in St. Vincent's Hospital, Indianapolis, July 29.

William Francis Farmer, Tewkesbury, Mass.; Harvard University, Medical School, 1905; aged 35; died, June 5, from intestinal tuberculosis.

Thomas D. Aydelotte, Lyons, Ind.; University of Louisville, Ky., 1888; aged 82; a practitioner for fifty-five years; died about July 30.

James J. Concannon, New York City; College of Physicians and Surgeons in the City of New York, 1890; aged 64; died, August 1.

George Phillip Rodemich, Millstadt, Ill.; Barnes Medical College, St. Louis, 1908; aged 47; died, June 12, from nephritis.

Romulus Culver Bigga, Greenup, Ky.; Bellevue Hospital Medical College, 1868; aged 76; died, May 22, from arteriosclerosis.

Moses Chappell Heath, Richmond, Ky.; Bellevue Hospital Medical College, 1871; aged 75; died in Stamford, Ky., July 27.

William J. Young ● Fairfax, S. C.; University of Maryland, Baltimore, 1872; aged 69; died, July 25, from heart disease.

Julius C. Fitch, Hastings, Minn.; Rush Medical College, 1866; aged 79; a veteran of the Civil War; died, July 23.

John Frank Peterman, Lebanon, Pa.; Hahnemann Medical College, Philadelphia, 1886; died, Juy 25, from pneumonia.

Isaac W. Finley, Guthrie, Okla.; Meharry Medical College, Nashville, Tenn., 1912; aged 32; died in Denver, July 22.

Ulrich Harder, St. Louis; Missouri Medical College, St. Louis, 1878; aged 74; died, June 27, from myocarditis.

Samuel Clymer Moyer, Lansdale, Pa.; Hahnemann Medical College, Philadelphia, 1872; aged 73; died, August 4.

James J. Tillapaugh, Wolcott, N. Y.; Baltimore University, 1890; aged 63; died, August 5, from heart disease.

James H. Roberts, Ehrhardt, S. C.; Medical College of South Carolina, Charleston, 1887; died, July 18.

Richard H. Drewry, Brooks, Ga.; Medical College of Georgia, Augusta, 1877; aged 67; died, June 25.

James K. P. Black, Sage, Ark.; University of Nashville, Tenn., 1877; aged 79; died, July 21.

The Propaganda for Reform

In This Department Appear Reports of The Journal's Bureau of Investigation, of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Fraud on the Public and on the Profession

SUKRO-SERUM AND APHLEGMATOL

Report of the Council on Pharmacy and Chemistry

Two years ago, American newspapers contained accounts of an alleged cure for pulmonary tuberculosis "discovered" by Prof. Domenico Lo Monaco of Rome, Italy. At that time no reference to the "cure" could be found in medical journals which had come from Italy and other European countries (The Journal A. M. A., July 13, 1918, p. 142). Later, reports were published of experiments carried out in Italy, according to which the intramuscular injection of solutions of sugar (saccharose—cane sugar) diminished pulmonary secretion and was of considerable value in the treatment of tuberculosis (The Journal A. M. A., Sept. 28, 1918, p. 1083). On the whole, the reports of the trial of what has been called the Italian Sugar Cure for Consumption have been unfavorable. At a meeting in Paris in October, 1918, Drs. Louis Rénon and Mignot reported that they had found that the disease in guinea-pigs was not modified by the treatment and with humans, the results were also negative (Paris Letter, The Journal A. M. A., Nov. 23, 1918, p. 1760).

In view of the exploitation of this treatment in the United States by the Anglo-French Drug Co., which offers "Sukro-Serum," and by G. Giambalvo & Co., which sells "Aphlegmatol," and because of inquiries received, the Council has authorized publication of the statement which follows.

W. A. Puckner, Secretary.

A circular issued by the Anglo-French Drug Co. describes "Sukro-Serum" as a "Sterilized Solution of lacto-gluco-saccharose." By reading the circular to the end, however, one learns that "Sukro-Serum" is not a "serum" in the ordinary sense, but apparently it is a solution of ordinary sugar (sucrose). "Sukro-Serum is a sterilized, specially prepared solution of Saccharose."

Sukro-Serum has been advertised (*N. Y. Med. Jour.*, Sept. 6, 1919) as an "INTRAMUSCULAR INJECTION FOR TUBERCULOSIS" ". . . ready for use in cases of Pulmonary and general Tuberculosis" with the assertion that "It is quite certain that in the near future Sukro-Serum will be largely used and its value fully recognized." The circular received from the Anglo-French Drug Co. contains quotations from an article by Professor Lo Monaco in the *British Medical Journal* (Aug. 24, 1918) setting forth the merits of intramuscular injections of sucrose in tuberculosis. It is recommended that "Néocaine-Surrénine" (which the Anglo-French Drug Co. supplies) be used for the control of pain when Sukro-Serum is injected.

The circular enclosed with a package of "Aphlegmatol," purchased from G. Giambalvo & Co., contained the following with reference to the composition of this preparation:

"A solution of Hydrats of Carbon After the formula of Prof. D. Lo Monaco, Director of the Institut of Physiological Chemistry of the University Of Rome. Contents: *Sucrose* ($C_{12}H_{22}O_{11}$) *Glucose and Galactose* ($C_6H_{12}O_6$)."

The package contained ampules of thin, fragile, brown colored glass, containing approximately 2½ c.c. of light, clear, amber colored, thick, sticky fluid, having a distinct caramel odor. Reaction $p_H = 5.0$. A reducing substance (probably glucose) amounting to 7.4 per cent. was found by using Benedict's method for estimating glucose quantitatively; after hydrolysis with hydrochloric acid, 55.5 per cent. glucose was found. There was no reaction for albumin. No attempt was made to identify the sugars, as it seemed probable that in the preparation caramel had been produced.

The circular which accompanied the package of Aphlegmatol contained the following information (spelling and composition as in original) about its use and effects:

To be emploied wherever a large bronchial secretion is present in the respiratory branches disease. The secretion will diminuish and, in non complicated cases, it will completly disappear.

Fever, cough, hemottisis, night prespiration, vomiting and difficulty of breating are, in the meantime, diminuished.

Aphlegmatol acts also as a ricon-stituent, being itself a nurrishing composition, improves the digestive function of the body and increases the arterial pressure.

5 c.c. (2 Phials) of Aphlegmatol per day must be injected intramuscularly in the Gluteus.

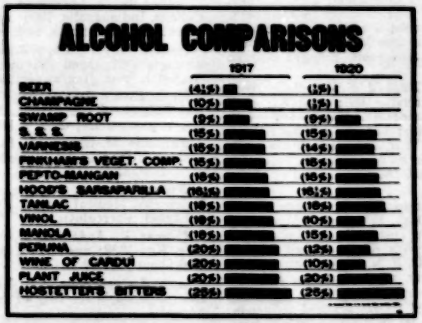
If the patient wishes two injections may be made, one at the right immediatly followed by a second one at the left.

The cure must not be interrupted untill sometime after expectoration has desappeared, which result may be obtained only after fifty or sixty days, in the meantime the patient must be controlled by his home physician, especialy when thermal elevation of the body takes place.

Improvement will be manifested on or about the tenth day of the first injection.

In the advertising circular, which is apparently intended for general distribution, much the same information is given as in the sheet enclosed with the ampules, except that in the directions we find: "If the injections are painful—especially in cases where patients are very emaciated—physicians are advised to inject together with *Aphlegmatol*, as an anesthetic, a vial with 1 c.c. solution of Stovain at 3%." The advertising for Aphlegmatol contains many misspelled words and appears to be the work of those ignorant of the English language.

Tuberculosis is a widespread disease and a majority of the uninformed are only too willing and ready to try such a "cure." The preparations appear to be nothing more than concentrated solutions of sugar. It is probable that a small amount of cane sugar might be inverted to glucose and fructose, but experiments have shown that cane sugar subcutaneously administered in the small amounts used in this instance is largely excreted in the urine unchanged. Less is known about galactose, but the evidence available would indicate that galactose is largely excreted in the urine unchanged when given subcutaneously. Glucose would be absorbed as such, and the amounts under consideration, used by the system much the same as when given by mouth.



Miniature reproduction of one of the educational posters prepared by the Propaganda Department of The Journal. The originals measure 22 by 28 inches.

What Is a Health Center?—The term "health center" has been very loosely used as a name for everything from a milk station to a miniature health department. A real health center should be a complete health department. In a small city the health department should be the health center. In larger cities health centers should be established for the purpose of decentralizing official health activity and linking with it every agency carrying on public health activities within the area. It should also serve as a common headquarters in order to effect the closest cooperation with workers for sociologic and economic betterment—A. J. McLaughlin, *Public Health Rep.*, April 30, 1920.

Correspondence

DISEASE TRANSMISSION AND THE SCHOOL

To the Editor:—In the *Weekly Health Review* of May 29, 1920, published by the Department of Health, City of Detroit, and edited by Mr. George F. Palmer, epidemiologist, appears an article entitled "Age and Disease" which expresses such unusual opinions regarding the problem of communicable diseases in the schools that I feel obliged to take exception to it. This is all the more necessary when it is appreciated that the article emanates from no less authority than the department of health of one of our largest American cities. Doubtless many readers, lacking a medical perspective or failing to study the article, will assume the statements to be authoritative instead of purely speculative.

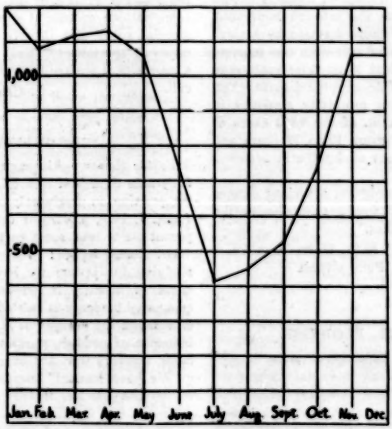
The article opens with the statement that "There are more cases of scarlet fever, diphtheria, measles and chickenpox reported among 6-year old children than at any other time during life. This is the experience in Detroit during 1919." Based on these statistics the question is asked: "Does this mean that there is actually more disease among children just entering school or that more disease is discovered at this time? Judging from the number of cases discovered by school nurses in the homes, it would seem as though schooling does not produce more disease. It simply reveals more disease."

Then follows a table of statistics expressing in percentages the incidence of these diseases by age groups; the actual number of cases on which the study is based is not given, however. It is shown that there is a gradual increase in incidence which reaches its peak at 6 years, followed by a decline which is slightly more abrupt. Certain of the diseases are then discussed in an effort to show that the school is of minor, if of any importance, in their spread. In speaking of scarlet fever the statement is made that "increasing motility and traveling radius with advancing age would seem to have more influence than the act of entering school, for the increase at 6 over 5 or 5 over 4 is no greater than the increments below these ages. This applies to diphtheria as well." Again, "In measles the increase at 5 and 6 is more abrupt. School in this case undoubtedly brings many more cases to light. There is no reason to believe that it is responsible for spreading measles." Still further it is stated that "chickenpox resembles measles in that the reported cases are more numerous at the age of entering school. Here, also, it would seem that school attendance is responsible for discovering rather than spreading the disease." In conclusion, this generalization is made: "It would appear from the above that the exclusion from school of children above 10 years or at least 12 years, because a younger brother or sister has some minor contagion, would hardly justify the time lost from school."

For our present purpose we will assume that the statistics on which this study is based are sufficiently large to warrant conclusions, and on this basis we will inquire into the justification of the conclusions that have been reached. First let us consider the modes of transmission of these infections and whether the school can be a potent agent in furthering such transmission.

All modern authorities agree that these diseases never originate spontaneously but are always transmitted to the well, especially by those in whom the disease is passing from the stage of incubation to the stage of expression, by those having the disease in a mild and unrecognizable form or by those termed healthy carriers. The usual course of transmission is by direct contact; this is true in such a large proportion of the cases that we need not consider the indirect or mediate methods here.

Certainly the school is a fruitful field for direct contact; for hours at a time the pupils are within the zone of droplet infection one with another. All pupils are possible disseminators of such infections. They are drawn together in the school from a rather large geographic area compared with the restricted area covered by playmates at home. It is easy to understand, therefore, how such a disease as scarlet fever may pass from one neighborhood to another through the school.



Monthly incidence of scarlet fever, representing medium prevalence for thirteen years in Pennsylvania.

The author of the report in question constantly belittles the importance of the school as a factor in the transmission of these diseases, but he also states that "increasing motility and traveling radius" exert a decided influence. Certainly he must have in mind that "increasing motility and traveling radius" exert their influence in the same ratio as they increase direct contact. If the contact by this means is important, it is hard to follow the reasoning that leads the author to ignore the innumerable direct contacts in school.

Have we any concrete evidence that points toward the school as a disseminator of disease?

A review of the morbidity statistics for the Commonwealth of Pennsylvania covering a period of thirteen years shows that scarlet fever, for example, varies in its monthly incidence in precisely the same way year after year. In June there is always a rapid decline in incidence, reaching the lowest level in July or August, followed by a rather sharp rise, beginning in September and mounting to its apex in January (as shown in the accompanying chart). Almost the same type of morbidity curve is found for diphtheria. Certainly the opening of the schools about September 1 must account for a considerable part of this morbidity rise. The only material change in the daily routine of a child during the month of September from that of August is his attendance at school during five or six hours a day. In view of the ease with which direct contact can play its rôle in the school, we are justified in concluding that the school does aid very materially in increasing the incidence of disease.

I would further point out that the cases which develop as a result of school contact may propagate the disease in the home. We see frequently families in which the mother, by endless care, has succeeded in protecting her children from these infections until the time comes for the eldest child to enter school. There, he falls heir to lurking measles, scarlet

fever or what not, and carries the disease home, where a household epidemic at once results. The cases that develop in the preschool age certainly are directly assignable to the school, and yet the author of "Age and Disease" seems to consider the school as an institution hermetically sealed from the home, and indicates no appreciation of the rôle which the school plays as a sort of exchange center for diseases.

The last paragraph of the article quoted concludes that the exclusion from school of children above 10 or 12 years because a younger brother or sister has some minor contagion would hardly justify the time lost from school. The "minor contagions" apparently referred to include scarlet fever, diphtheria, measles, whooping cough and chickenpox.

No modifying statements are made which lead us to believe that the author would favor the removal of this older child to an uninfected residence; it is not suggested that he be excluded from school even during the incubation period, nor does it seem to make any material difference whether or not the child is immune to the disease in question. We can therefore only assume that the author recommends that children above 10 to 12 years who are household contacts should be permitted to attend school from the infected household. The possibility of transmission of these diseases by a third person is thereby categorically denied. It does not seem to occur to the author that this child of 10 or more years may become a healthy carrier or himself develop the disease. Yet, in a typical year such as 1915, our morbidity statistics in Pennsylvania show that 25.7 per cent. of the 9,860 cases of scarlet fever occurred in the age group 10 to 19 years and that 18.5 per cent. of the 14,645 cases of diphtheria occurred in the same age group.

From such an experience I can only see a serious danger threatening the community which would subscribe to the views expressed in "Age and Disease."

George K. Strode, B.S., M.D., Harrisburg, Pa.
Chief, Division of School Health, Pennsylvania Department of Health.

WHY PROPRIETARIES FLOURISH

To the Editor:—The following experiences seem to add one more to the many reasons offered to explain why proprietaries and ready-made preparations flourish at the expense of the official drugs and preparations: A few days ago I prescribed Troches of Ammonium Chlorid, U. S. P., for a patient of exceptional perseverance. The next day he had not yet secured the troches and told me that he had submitted the prescription to seven pharmacies, including the largest, and three of the best known and admittedly the best equipped in New York. All told him that these troches were "Not being made any more," and that they were therefore unable to supply him. He thereupon communicated with one of the largest wholesale manufacturing pharmaceutical houses in America and received precisely the same answer. I then took the matter up with a first class pharmacist whom I knew and induced him to prepare this difficult (!) troche, for which the U. S. Pharmacopeia gives the following directions: "Rub the powders together until they are thoroughly mixed; then form a mass with syrup of tolu and divide . . ."

Seven pharmacists declined to fill a prescription for an official preparation because they could not buy the preparation from a wholesaler, and it required some persuasion to get the eighth to make the preparation. But, even worse, several of the pharmacists offered my patient some ready-made troche more or less closely resembling the official, or offered compressed tablets of ammonium chlorid.

That this is not an isolated example of what often poses as pharmacy is shown by the fact that I have found it extremely difficult to find a pharmacist who would extemporaneously coat pills with gelatin. Most want the physician to alter his prescription so that one of the ready-made gelatin coated pills can be dispensed, if a gelatin coating is necessary. Some gelatin, hot water, a large cork, and a few domestic sewing needles are all that is required for very satisfactory coating of pills with gelatin, yet few pharmacists seem willing to perform this simple procedure.

Two other illustrations, not so recent, have come to me from a colleague. A few years ago he was unable to obtain from either of two pharmacists an emulsion of cod liver oil without the hypophosphites because, as both said, "It does not come without hypophosphites." On another occasion four of the best drug stores in Boston were asked for the Compound Laxative Pill, U. S. P., then official in the pharmacopeia. In every case he was told that he must have meant the compound cathartic pill, which in no way resembles the pill he sought.

With this attitude on the part of the men supposed to be serving the public and the medical profession by the practice of pharmacy, is it any wonder that it is difficult to induce the medical profession to prescribe official preparations or combinations of official drugs in place of ready-made commercial substitutes largely drawn from among the proprietaries or specialties? Real pharmacy by real pharmacists is a necessity if we are to succeed in combating the proprietary evil.

Cary Eggleston, M.D., New York.

"CREDULITY AND CURES"

To the Editor:—Although I am aware that Dr. Peterson is fully able to defend himself against criticism made of him in his position on psychanalysis by Dr. Kempf in The Journal (Aug. 7, 1920, p. 427), I cannot refrain from asking you to permit me to take some part in the general discussion.

Dr. Kempf writes: "Through the psychanalytic method of studying the insane we have learned that the most potent cause of insanity is *repressed affective cravings;* and this repressive tendency is started early in childhood, not naturally or through the designs of Nature, but through the pernicious influence of prudish, purblind fathers and mothers, and dogmatic teachers who are obsessed with sexual phobias."

"We have learned" means psychanalysists have learned—for no one else has learned this.

I recall that Gil Blas associated himself with Dr. Sangrado as an apprentice, and under that master he engaged in the practice of bloodletting. The doctor had found this an infallible remedy. When to Gil Blas it seemed to fail in the face of the death of the patient, Dr. Sangrado pointed out that the bloodletting had been insufficient and that the death of the patient only showed the method was not sufficiently practiced. And, of course, when recovery occurred it was recorded as a triumph of this method of treatment. Christian scientists adopt the same method of reasoning. By their method there can be no failure whatsoever when all conditions are favorable and when their plans are completely carried out.

Only in orthodox medicine are failures recorded, even when conditions and technic are perfect. One could as little argue with a psychanalyst as with Dr. Sangrado or Mrs. Eddy. There simply is no argument with those who hold this position.

I have read the writings of Dr. Freud and Dr. Kempf and those of many others who adopt the Freudian methods. Being a practicing neurologist, it was my duty to do so; and now I do not attempt these methods because they do not appear reasonable; I should not attempt methods which do not appear to me as reasonable and sound and which, moreover, appear to me as unlikely or even dangerous. I know of no good results from the Freudian method, but I do know of harm resulting from it.

Theodore Diller, M.D., Pittsburgh.

NEED OF A PEDIATRICIAN ON THE NATIONAL BOARD OF MEDICAL EXAMINERS

To the Editor:—I was very much interested in the last report of the National Board of Medical Examiners. It is fair to assume that the primary purpose of their examinations is to determine the fitness of the candidates to practice medicine. Therefore it is of more than passing interest that of the eighty questions submitted in their last papers not a single one was immediately concerned with pediatrics.

Three may be said to be remotely connected: the child of 8 with the spots on the tonsils, the differentiation between varicella and smallpox, and the directions to prevent the familial spread of whooping cough.

Is a knowledge of pediatrics necessary to the young practitioner? This cannot be doubted, for, while figures vary, a conservative estimate is that one quarter of the patients seen in the first years are infants and children. It is doubtful whether there is any branch of medicine about which the general practitioner is more at sea. No papers are read with more avidity than those which throw light on the diseases peculiar to infancy and childhood. There are more reasons than one for this state of affairs, but the chief reason is the failure of the medical schools to meet the situation.

Pediatrics needs no brief. Feeding infants properly, training children in personal hygiene, cutting down the incidence of tuberculosis and heart disease at the time when they undoubtedly occur most frequently, linking up community work with child welfare, studying the psychology of childhood, especially the abnormal types seen in outpatient departments, hospitals and children's courts, and seeking to solve the tremendous problem of the contagious diseases are a few concrete examples of the problems which are presented to the pediatric department of the medical school.

Preventive pediatrics is recognized as second to no other branch of preventive medicine. This being so, it seems to me that there is a crying need for the appointment of a pediatrician to the National Board of Medical Examiners. This will lead to two desirable ends: Candidates will know more about the diseases of infancy and childhood, and medical schools will be forced to give courses in keeping with the importance of the subject.

LOUIS C. SCHROEDER, M.D., New York.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

QUININ AND UREA HYDROCHLORID

To the Editor:—Could you tell me why quinin and urea hydrochlorid has not become more popular for local anesthesia? Is it less efficacious or more toxic than other preparations? If it is useful, can you name some trustworthy firm or brand? Please omit my name in answering.

L. F. C., M.D., Mexico.

ANSWER.—Quinin and urea hydrochlorid "has the actions of quinin. When injected hypodermically it exerts an anesthetic action much more prolonged than that of cocain" (Useful Drugs, Ed. 4, 1920, p. 127). It has been pointed out editorially in THE JOURNAL (Feb. 14, 1920, p. 462) that quinin has been regarded for more than half a century by toxicologists as a protoplasmic poison capable of destroying various forms of animal and vegetable cells, and hence it need not be surprising that tissue necrosis may be produced by strong solutions of the quinin salts. That this deleterious reaction actually does occur and has mitigated against the general use of quinin and urea hydrochlorid is confirmed by the report of the Committee on the Advantages and Disadvantages of Local Anesthesia in Nose and Throat Work (THE JOURNAL, July 31, 1920, p. 315). To quote:

> The only local anesthetic that produces edema and sloughing is quinin and urea hydrochlorid. So many statements were found in the literature that this anesthetic had been abandoned in other fields of medicine because of edema and sloughing, that writers who had presented favorable reports in nose and throat operations were communicated with by your committee. One writer who had recorded 390 cases of tonsillectomies extolling this anesthetic, which he had used for four years and is still so recorded, now states that he has not used it in two years, although no publication has been made retracting his former endorsement. Still another writer, who stated that quinin-urea came nearest the ideal local anesthetic, now states that he has ceased using it. Your committee finds that as far as nose and throat operations are concerned, this drug has practically gone into "innocuous desuetude."

The anesthesia produced by this drug at the time of operation is good and the recovery of the patient might often be enhanced by its use if it did not have the serious drawback. The product is official in the U. S. Pharmacopeia, and may be obtained from any reputable pharmaceutical house.

SPANISH MEDICAL REVIEWS

To the Editor:—Will you kindly send me the address of Spanish journals similar to the Spanish Edition of THE JOURNAL.

M. MAÑAS, Havana, Cuba.

ANSWER.—We know of no journal in Spanish corresponding to the Spanish edition of THE JOURNAL.

Among the better known medical journals in the Spanish language may be mentioned:

Anales de la Facultad de Medicina, Montevideo. Bimonthly; $2.
Anales de la Facultad de Medicina, Lima, Peru. Bimonthly; 6 soles.
Gaceta Médica de Caracas, Caracas, Venezuela. Semimonthly; 16 bolivares.
Gaceta Médica de México, Mexico City. Irregular; $6.
Prensa Médica Argentina, Buenos Aires. Trimonthly; 35 pesos.
Revista de la Asociación Médica Argentina, Buenos Aires. Monthly.
Revista de la Universidad de Buenos Aires, Buenos Aires. Monthly; $5.
Revista Española de Medicina y Cirugía, Barcelona. Monthly; 24 pesetas.
Revista Médica del Uruguay, Montevideo. Thirty francs.
Semana Médica, Buenos Aires. Weekly; $5.
Siglo Médico, Madrid. Weekly; 20 pesetas.
Medicina Ibera, Madrid. Weekly; 25 pesetas.
Progresos de la Clínica, Madrid. Monthly; 45 pesetas.
Plus Ultra, Madrid. Monthly; 60 pesetas.

We presume the inquirer is familiar with Cuban medical journals, and therefore none is mentioned from that country.

NAPOLEON'S REPLY TO MADAME DE STAËL

To the Editor:—Will you kindly satisfy my curiosity on the following point? Dr. Hayne in his article on "The Rights of the Child" (THE JOURNAL, July 17, 1920) quotes Napoleon's reply to Madame de Staël, "She who has borne the most sons for France." Is that historical or but a paraphrase of Madame Staël-Holstein's reply to Napoleon when, in a fit of ill humor, he bluntly asked her, "What have you given to France?" and she quickly replied, "Three children, your Majesty." "Où n'est pas la femme?"

JOHN A. WILMER, M.D., Powers, Ore.

ANSWER.—The statement of Napoleon to Madame de Staël is to be found in Gourgaud (le baron Gaspard), Sainte Hélène, Journal inédit de 1815 à 1818, Paris, Flammarion, 1919. The passage reads:

> Jan. 18, 1816: Napoleon related: At a fête at Talleyrand's, Mme. de Staël seated herself next to Napoleon, conversed for two hours, and finally asked him abruptly: "Who is the greatest woman of the past or the present?" Napoleon replied: "She who has or has had the most children."

This is perhaps confused with the statement of Napoleon uttered at St. Helena: "Woman was given to man that she should bear him children" ("La femme est donnée à l'homme pour qu'elle fasse des enfants").

AMOUNT OF WINE THAT MAY BE PRESCRIBED

To the Editor:—Please advise me how much wine a physician can prescribe to any one patient at any one time.

F. D., New York.

ANSWER.—Internal Revenue Regulation 60 defines liquor as including alcohol, brandy, whisky, rum, gin, beer, ale, porter and wine and in addition thereto any spirituous, vinous, malt and fermented liquor, liquids and compounds containing ½ of 1 per cent. or more of alcohol by volume. Article 12, Section 69, Paragraph B of the regulations provides that prescriptions for any alcoholic medicinal preparations may not be issued for more than one pint of spirituous liquor at a time, and that not more than one pint shall be prescribed for the same person within any period of ten days.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALASKA: Juneau, Sept. 7. Sec., Dr. Harry C. De Vighne, Juneau.

HAWAII: Honolulu, Sept. 6-10. Sec. Dr. R. W. Benz, 1141 Alakea St., Honolulu.

ILLINOIS: Chicago, Sept. 20-23. Director, Francis W. Shepardson, State House, Springfield.

IOWA: Des Moines, Sept. 15-17. Sec., Dr. Guilford H. Sumner, Capitol Bldg., Des Moines.

MASSACHUSETTS: Boston, Sept. 14-16. Sec., Dr. Walter P. Bowers, State House, Boston.

NEW HAMPSHIRE: Concord, Sept. 9-10. Sec., Dr. Charles Duncan, Concord.

National Board Recognized in Scotland

In the spring of the present year, several representatives of licensing boards of England and France came to this country as guests of the National Board of Medical Examiners, attended one of the examinations and, in a tour through various large cities, visited a number of the medical schools. Dr. Walter L. Bierring, a member of the National Board, who accompanied them on the tour, has recently received a letter from one of these guests, Dr. Norman Walker, a member of the General Medical Council of Medical Education and Registration of Great Britain and a representative of the Triple Qualification Board of Scotland, stating that the latter body had adopted a recommendation that American physicians who hold the certificate of the National Board of Medical Examiners be admitted to the final examination of the Triple Qualification Board.

Clinical Teaching "Elements"

The London *Lancet* states that the reorganization of teaching in St. Bartholomew Hospital provides for a medical "element" or division, and a surgical element, each of which will take its share in the ordinary duties of the hospital, the entire staff of each to work as a single "firm." Each is provided with special facilities for observation and research, and has laboratories for pathologic investigation and routine work. These two teaching elements are closely associated with the medical and surgical work of the hospital. There is free daily communication between them. Certain appointments in connection with the reconstruction of the pathologic department have been announced, including a bacteriologist and lecturer on bacteriology, a lecturer on morbid anatomy and histology, and a chemical pathologist and lecturer on chemical pathology. Three senior demonstrators are whole-time pathologists, and, in addition, there are three demonstrators who are part-time pathologists and eligible for posts as chief assistants in one or other of the clinical elements. It is proposed that all chief assistants in future shall have previously served in the pathologic department, since one of their functions within the elements will be to superintend the pathologic work of the students. These changes in the medical school will make pathology more essentially a part of the clinical teaching.

Florida June Examination

Dr. William M. Rowlett, secretary of the Florida State Board of Medical Examiners, reports the written examination held at Jacksonville, June 14-15, 1920. The examination covered 7 subjects and included 70 questions. An average of 75 per cent. was required to pass. Of the 49 candidates examined, 36 passed and 13 failed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Atlanta Medical College	(1915)	84.3
Emory University	(1920)	91.7, 85.5
University of Georgia	(1920)	86.4, 90.2
Southern Medical College	(1897)	81.3
Indiana Med. College of Purdue University	(1906)	82
Indiana University School of Medicine	(1917)	87.4
University of Indianapolis	(1904)	78.8
University of Louisville	(1920)	89.7
Tulane University	(1920)	86.4, 86.7, 91.6
College of Physicians and Surgeons, Baltimore	(1893)	78.9
Boston University School of Medicine	(1916)	91.4
College of Physicians and Surgeons, Boston	(1911)	88.7
Missouri Medical College, St. Louis	(1887)	82.6
St. Louis Univ. School of Medicine	(1904) 82.3, (1908)	86.4
Fordham University School of Medicine	(1913)	86.2
University and Bellevue Hospital Medical College	(1911)	90.1
University of the City of New York	(1880)	95.7
Jefferson Medical College	(1912) 82, (1915)	88.3
Meharry Medical College	(1916) 80, (1919)	78, 80
Memphis Hospital Medical College	(1895)	79.8
University of Nashville	(1906)	82.2
University of the South	(1907)	80.7
University of West Tennessee	(1911)	75
Vanderbilt University	(1920)	84
University of Texas	(1915)	84.7
Medical College of Virginia	(1914) 80.5, (1918)	86.8
University of Edinburgh, Scotland	(1902)	91.4
FAILED		
University of Arkansas	(1907)	70
Southern College of Medicine and Surgery	(1913)	68.1
Illinois Medical College, Chicago	(1910)	70.7
College of Physicians and Surgeons, Chicago	(1907)	70.7
University of Louisville	(1904)	67.1
College of Physicians and Surgeons, Boston	(1912)	71.6
Beaumont Hospital Medical College	(1889)	61.6
Homeopathic Medical College of Missouri	(1902)	45
Albany Medical College	(1882)	70.9
Long Island College Hospital	(1899)	69.3
Chattanooga Medical College	(1909)	48.5
Memphis Hospital Medical College	(1913)	68.9
University of Nashville	(1909)	73.1

Nebraska June Reciprocity Report

Mr. H. H. Antles, secretary, Department of Public Welfare of the Nebraska State Department of Health, reports 25 candidates licensed by reciprocity at a meeting held at Lincoln, June 9-11, 1920. The following colleges were represented:

College	Year Grad.	Reciprocity with
Georgia Coll. of Eclectic Medicine and Surgery	(1914)	Arkansas
American Medical Missionary College	(1910)	Mass.
Chicago College of Medicine and Surgery	(1917)	Illinois
Jenner Medical College	(1914)	Illinois
Loyola University	(1916), (1918, 2)	Illinois
Northwestern University Medical School	(1919)	Illinois
Rush Medical College	(1915), (1919)	Illinois
Indiana University School of Medicine	(1919)	Indiana
State University of Iowa College of Medicine	(1916)	Iowa
College of Physicians and Surgeons, Kansas City	(1898)	Kansas
Kansas Medical College, Topeka	(1908)	Kansas
Johns Hopkins University	(1916)	Maryland
University of Minnesota Medical School	(1907)	Minnesota
Barnes Medical College	(1910)	Missouri
St. Louis University School of Medicine	(1912)	Iowa
Columbia University	(1909), (1916)	New York
Jefferson Medical College	(1915)	Missouri
University of Pennsylvania School of Medicine	(1898)	Penna.
Meharry Medical College	(1918)	Arkansas
University of Tennessee College of Medicine	(1906)	Oklahoma
University College of Medicine, Richmond	(1907)	Minnesota

Maine July Examination

Dr. Frank W. Searle, secretary of the Maine Board of Registration in Medicine, reports the written examination held at Portland, July 6-7, 1920. The examination covered 10 subjects and included 95 questions. An average of 75 per cent. was required to pass. Seventeen candidates were examined, all of whom passed. Three candidates were licensed by reciprocity. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Bowdoin Medical School (1920) 80, 81, 82, 82, 83, 84, 84		
Johns Hopkins University	(1919)	84
Harvard University...(1898) 82, (1906) 78, (1914) 82, (1920) 81, 82, 83.		
Boston University	(1920)	82
Tufts College Medical School	(1920)	77
McGill University, Montreal	(1920)	83
LICENSED BY RECIPROCITY		
University of Vermont	(1918, 1919)	Vermont
Royal College of Surgeons, Edinburgh	(1893)	New Hamp.

Arkansas Eclectic May Examination

Dr. Claude E. Laws, secretary, Arkansas Eclectic Board of Medical Examiners, reports the written and oral examination held at Little Rock, May 11-12, 1920. The examination covered 12 subjects and included 120 questions. An average of 75 per cent. was required to pass. The 41 candidates examined were all graduates of the 1920 class of the Kansas City College of Medicine and Surgery, and of the 41, 20 passed and 21 failed.

Book Notices

DIE SCHWEBELARYNGOSKOPIE UND IHRE PRAKTISCHE VERWERTUNG. Von Geh. Med.-Rat Prof. Gustav Killian, Direktor der Laryngo-Rhinologischen Klinik der Universität Berlin. Price, 60 marks. Pp. 78, with 48 illustrations. Berlin: Urban & Schwarzenberg, 1920.

Killian gives the history of his discovery of suspension laryngoscopy, describes the instruments he now uses, and, and presents his technic in detail for examination of the hypopharynx and the trachea, and for introduction of the bronchoscope. In the first chapter he narrates how he rigged up a temporary apparatus for exposure of the larynx in a cadaver so that an artist might make drawings. This was so successful that he then devised instruments for exposing the larynx in the living. The original instruments have been much modified. He now uses the trough shaped spatula for holding up the tongue. The mouth gag and tooth hooks are much after the models of Lynch. The original form of the gallows is retained. His table has a separate support for the head by which it may be raised or lowered independently of the table. The table itself may be raised by means of a long screw so that the surgeon may work standing, if necessary. Killian uses a Kirstein lamp for illumination and so is able to use the mirror of the lamp for a demonstration mirror, enabling students to see in the mirror what the surgeon sees in the larynx. In chapter V he describes in detail his technic of introducing the instrument, and exposing the uvula, the edge of the epiglottis, the arytenoids, the lumen of the larynx, and lastly the anterior commissure. The work of Lynch is mentioned, but no description is given of Lynch's method of exposure of the larynx without having the head hanging over the end of the table. Figures 37, 38 and 39 are wrongly numbered. They should be 38, 39 and 37, respectively. Chapter IX is given to the use of suspension laryngoscopy in children, a procedure of much value, especially in introducing the bronchoscope. There is a considerable list of references to the literature, but naturally few to American literature since the outbreak of the war. The work is illustrated by forty-four cuts in the text and four colored plates showing various normal and abnormal conditions. The colored plates are a little too blue and appear to represent patients rather more cyanotic than they are seen in America. This may be only a result of the war as affecting color printing.

LE SYMPATHIQUE ET LES SYSTÈMES ASSOCIÉS: ANATOMIE CLINIQUE, SÉMIOLOGIE ET PATHOLOGIE GÉNÉRALE DU SYSTÈME NEURO-GLANDULAIRE DE LA VIE ORGANIQUE. Par A. G. Guillaume. Paper. Price, 6 francs 50 net. Pp. 160, with illustrations. Paris: Masson et Cie, 1920.

In this book, emphasis is laid on the fact that the chromaffin organs are from the standpoint of their development and function closely associated with the sympathetic nervous system, and the cranial, thoracicolumbar and sacral portions of the autonomic system, together with these chromaffin organs, form a closely integrated complex, "le grand système neuro-glandulaire de la vie organique." Chapter I contains a brief review of the general morphology and physiology of this system, including the histogenesis, anatomic distribution and functional relationships of its constituent elements. Chapter II presents some details concerning the conduction paths in the autonomic system. The part that deals with the visceral efferent paths associated with the cranial nerves is thoroughly up to date and is accompanied by good diagrams. Chapter III deals with the pharmacologic aspects of the subject, and Chapters IV and V with symptomatology. Chapter VI contains a discussion of the interrelations between the visceral and somatic subdivisions of the nervous system, and especially with referred pain in visceral disease and with reflex trophic disturbances. The volume contains little that is new; and some statements that are presented as representing established facts are certainly open to question. It makes no pretense of being a thoroughgoing review of recent literature. The appended bibliography contains no references to articles representing original investigation, but includes a list of standard reference books and monographs on embryology, physiology, endocrinology, pharmacology and neurology which contain sections dealing with the subjects discussed in the book.

Medicolegal

Evidence of Malpractice—Use of Fracture Basket

(Wojciechowski v. Coryell (Mo.), 217 S. W. R. 638)

The St. Louis Court of Appeals, in affirming a judgment in the plaintiff's favor for $3,000 damages for alleged malpractice, says that a sheet of stel fell on his right leg, causing a compound comminuted fracture of the bones and inflicting lacerations or wounds. He adduced evidence tending to show that it was negligence to place his leg in a wire basket, or fracture basket, after the setting of the bones, and to allow it to remain there for weeks, instead of putting it in a splint or cast of some character designed to hold the bones rigidly in position, unless it could be said, as a matter of law, that the course pursued by the defendant was justifiable because of the condition of the leg, or, at any rate, that because of such condition the defendant's failure to pursue a different course was the result of an error of judgment on his part of such character as would not entail liability under the law. As to the condition of the leg at that time the evidence in the plaintiff's behalf tended with much force to show that no infection, or at least none of any considerable extent, or of a serious or dangerous character, was present. This directly appeared from the testimony of the plaintiff as to the condition of his leg, and inferentially from his testimony, corroborated by that of another witness, to the effect that, after the setting of the leg, the bandage which the defendant placed about the leg and wire basket, which, it was said, completely covered the leg, no openings being left and no drain pipes inserted, was not removed for three weeks or more, the leg receiving no treatment during that time. From the testimony of the plaintiff and said witness, coupled with the expert testimony adduced by the plaintiff, a jury could, with entire propriety, find that there was no infection or other condition present, such as to make it in any wise unsafe to use some one of the devices shown by the evidence to have been in common use, designed to keep the bones of the leg in proper alinement while they were uniting; and the testimony of the plaintiff's expert tended to show that some of these devices, designed so as to afford opportunity for treating the leg, might be used in these cases, though much infection might be present. The court is of the opinion that the evidence was such as to make the question of the defendant's negligence one for the jury. Nor, under the circumstances, does the court think that there was any merit in the contention that under any view of the evidence the defendant was guilty at the most of a mere error of judgment as to the proper treatment to be given the plaintiff's injured leg, and could not be held liable for a failure to give a different treatment. The court is of the opinion that the evidence, when viewed in the light most favorable to the plaintiff, tended to show neglect on the part of the defendant, and that, so viewing the evidence, if there was an error of judgment, it was, prima facie, of such character as to be inconsistent with the use of that degree of skill which it is the duty of every surgeon, under like circumstances, to bring to the treatment of such a case.

It was urged that error was committed in admitting testimony tending to show that the defendant failed to use an anesthetic, failed to take more than one roentgenogram, did not lance the wound, or insert drainage tubes, did not elevate the leg, or apply ice bags, did not call a consulting physician, and did not inform the plaintiff or his family of the seriousness of his condition, as testified to by the defendant. The point made was that the petition charged particular acts of negligence, and therefore evidence as to other specific acts was not admissible. But the court thinks that no reversible error intervened on this score. The testimony complained of was admissible as going to show the character of the treatment, alleged by the plaintiff to have been negligent and unskilful, or as tending to show the condition of the leg, this having an important bearing on the question as to the alleged negligent and unskilful treatment thereof.

Nor was it error to permit the jury to find that the defendant not only failed to use a splint, but "failed to apply any other method or device to cause said fractured bones to unite

in normal and usual alinement." Under the evidence adduced the jury could properly find that in using the wire fracture basket the defendant did not use a method or device such as to cause the fractured bones to unite in normal and usual alinement.

Invalid Provision in Law for Revoking Licenses

(State Board of Medical Examiners et al. v. Lewis (Ga.), 102 S. E. R. 24)

The Supreme Court of Georgia holds that Section 14 of the act approved Aug. 18, 1913, entitled "An act to abolish the present state board of medical examiners and to establish a composite board of medical examiners for the state of Georgia; to define its duties and powers," etc., is unconstitutional and void so far as it provides for the trial and conviction of a licensed physician of certain specified offenses, and the consequent revocation of his license; as the section, so far as it provides for such trial and the penalty on conviction, is violative of the due process clause of the federal and state constitutions, as no provision is made in the section, or elsewhere in the act, for due notice and hearing of the accused. Furthermore, the court holds that, where a licensed physician was tried and convicted under said Section 14, and appealed to a jury in the superior court, where he was again convicted, and then sued out a writ of error to the Court of Appeals of Georgia, where the conviction was sustained, he could subsequently attack the judgments of conviction in the superior court and before the board of medical examiners, and, on proper petition to a court of equity, prevent the enforcement of the penalties imposed by the act on conviction.

The supreme court says that, though in this particular case the accused might have appeared and submitted evidence, that did not cure the defect in the act itself. If such a hearing was granted him, it was by grace, and not by virtue of the requirements of the law. Nor did the right of appeal to a jury in the superior court cure the defect in the law. The statute under which the accused was tried by the state board of medical examiners being invalid and void on the constitutional grounds pointed out, the proceedings before the board, which resulted in finding the defendant guilty of certain specified offenses, were nugatory, and the finding was without effect and void; and the appeal and trial before a jury under the provisions of Section 14 could not have the effect of giving validity to the proceedings and findings before the board, nor could the finding of the jury in the superior court on the appeal be treated otherwise than as void, as the statute under which the trial was had was itself invalid. Nor could the fact that the case was carried to the court of appeals, where the judgment of the court below was affirmed, give validity to the proceedings, or bar the accused from asserting that all proceedings had against him were nugatory.

It was urged that even if the principles stated were sound in criminal cases, the doctrine could not be applied to civil cases; and it was insisted that the proceedings against the accused, which resulted in his conviction and the revocation of his license, were civil proceedings. But the supreme court cannot assent to this proposition in its entirety. The result, it was true, did not subject the accused to imprisonment in the chain gang or the penitentiary, and resulted merely in the revocation of his physician's license and the striking of his name from the record kept in the office of the clerk of the superior court. But this itself was a penalty, and the proceedings were in the nature of criminal proceedings. The proceedings were certainly quasi-criminal in character. The language of the section which authorizes the proceedings, making it the duty of the board to "prefer charges against the physician," and providing for the revocation of his license "in the event of his conviction" by the jury, distinctly imports a trial in a criminal case.

It follows that the accused was entitled to injunctive relief against the threatened action of the state board of medical examiners, which, if carried out, should result in revoking and canceling his license and thereby depriving him of the right to pursue his profession; and it requires no argument to demonstrate that the injury which would thus be inflicted would be irreparable in its character. The court below did not err in granting such injunctive relief.

Society Proceedings

COMING MEETINGS

Amer. Assn. of Electro-Therapy & Radiology, Atlantic City, Sept. 14-17.
Amer. Assn. of Obstetricians and Gynecologists, Atlantic City, Sept. 20-22.
American Association of Railway Surgeons, Chicago, Oct. 6-8.
American Public Health Association, San Francisco, Sept. 13-17.
American Roentgen Ray Society, Minneapolis, Sept. 14-17.
Colorado State Medical Society, Glenwood Springs, Sept. 7-9.
Indiana State Medical Association, South Bend, Sept. 23-25.
Kentucky State Medical Association, Lexington, Sept. 27-30.
Medical Association of the Southwest, Wichita, Kan., Sept. 27-29.
Minnesota State Medical Association, St. Paul, Sept. 29-30.
Missouri Valley, Medical Society of the, Omaha, Neb., Sept. 6-7.
Pennsylvania, Medical Society of the State of, Pittsburgh, Oct. 4-7.
Utah State Medical Association, Ogden, Sept. 7-8.
Vermont State Medical Society, Rutland, Oct. 7-8.
Washington State Medical Association, Tacoma, Sept. 16-17.
Wisconsin, State Medical Society of, La Crosse, Sept. 8-10.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal Medical Sciences, Philadelphia

July, 1930, 180, No. 1

*Carcinoma of Pancreas. K. Speed, Chicago.—p. 1.
Therapeutic Use of Oxygen. R. D. Rudolf, Toronto.—p. 10.
Case of Splenomegaly with Polymorphonuclear Neutrophil Hyperleukocytosis. E. L. Tuohy, Duluth, Minn.—p. 18.
*Comparative Study of Trypanocidal Activity of Arsphenamin and Neoarsphenamin. J. P. Schamberg, J. A. Kolmer and G. W. Raizin, Philadelphia.—p. 25.
*Contraction Waves in Normal and Hydronephrotic Ureter: An Experimental Study. W. G. Penfield, Oxford, Eng.—p. 36.
Diets for Ambulant Treatment of Diabetes Mellitus. H. O. Mosenthal and H. J. Wiener, New York.—p. 46.
Acute Infectious Enteritis with a Polyneuritic Syndrome. F. J. Farnell and A. H. Harrington, Howard, R. I.—p. 52.
Functional Blood Pressure. R. F. Ives, New York.—p. 61.
*Study of Blood After Splenectomy: Special Reference to Leukocytes. M. W. Hall, M. C., U. S. Army.—p. 72.
Modern Individualized Dietary Treatment in Diabetes. M. Lauritzen, Copenhagen.—p. 79.
Roentgen-Ray studies of Bronchial Function. J. G. M. Bullowa and C. Gottlieb, New York.—p. 98.
Heteroplastic Bone Formation in Fallopian Tube. G. Asami, Honolulu.—p. 107.
Mercury Bichlorid Intravenously. C. H. Bastron, Lincoln, Neb.—p. 118.

Carcinoma of Pancreas.—Fifty-two cases of primary pancreatic cancer were analyzed by Speed. Over half of these were clinical diagnoses made by the attending staff of Cook County Hospital. In the fifty-two cases the average age at the time of diagnosis of primary cancer was 57 years, the youngest 36, the oldest 76. The most constant symptom was cachexia. This was present in 90 per cent. of the patients at the time of admission and involved a weight loss of from a few pounds to 80 pounds. The next common symptom was jaundice. It was present in 80 per cent. of the cases. Pain was the third prominent symptom, usually of cardialgic or gastralgic character, present in 61 per cent. of the cases. Personal knowledge on the patient's part of an abdominal tumor mass or its discovery on examination was the next common finding in order; 55 per cent of the patients had a mass either in the liver or some part of the midepigastric region. Ascites was present in approximately 20 per cent. as was also hemorrhage, which occurred in eleven patients, two of the mouth, four of the nose, one of the bowel, two in the buttocks and skin and two of the stomach. Constipation was mentioned by nineteen patients; diarrhea occurred in but three. Edema of the lower extremities occurred in 6 per cent. A necropsy was made in eleven cases. The head of the pancreas was most often involved in cancer, the body next and the tail least often. Not one showed pancreatic calculus. Metastases occur usually first in the lymphatic glands around the pancreas and galltract areas. The liver, of all neighboring organs, is most often invaded.

Trypanocidal Activity of Arsphenamin and Neo-Arsphenamin.—From the results obtained by Schamberg and his co-workers it is evident that neo-arsphenamin is a safer drug than arsphenamin; even when doses of 1 gm. of neo-arsphenamin, which approximates 0.6 gm. of arsphenamin in therapeutic activity, are given in the treatment of syphilis there remains a larger margin of safety. The trypanocidal activity of arsphenamin is 1.74 times greater than that of neo-arsphenamin. Accordingly, 0.6 gm. arsphenamin equals 1.05 rather than 0.9 gm. of neo-arsphenamin in therapeutic activity. The trypanocidal dose (dosis therapeutica) of arsphenamin is 4.56 times less the highest tolerated dose for the rat (dosis tolerata); the trypanocidal dose of neo-arsphenamin is 6.35 times less the highest tolerated dose. These results indicate that neo-arsphenamin is a somewhat safer compound than arsphenamin; and that when 1 gm. of neo-arsphenamin is administered as the equivalent in therapeutic activity to 0.6 gm. of arsphenamin, the margin of safety is even then greater.

Cause of Contraction Waves in Ureter Calculus.—It is suggested by Penfield that in the passage of a ureteral stone, trauma and inflammation increase the rate of metabolism in the ureter wall about the stone, a constriction ring results, followed by distention of the ureter and retroperistalsis. This would cause great distention of the renal pelvis and give to renal colic its peculiar rhythmical character.

Leukocyte Count Following Splenectomy.—Following the usual drill a cavalryman was seized with faintness, nausea and sudden sharp pain in the left upper quadrant of the abdomen. He was brought to the hospital in a condition of collapse. A definite diagnosis was impossible, but six hours after the onset of symptoms a laparotomy was done, with the tentative diagnosis of a ruptured viscus. Hemorrhage in the peritoneum was traced to a small tear in the spleen and the organ was removed. The removal of the spleen resulted in a considerable increase in the total leukocyte count which persisted with much irregularity for over three months. In the early period all types of leukocytes were increased in nearly the same proportion, although a slight increase of endothelial cells was noted at the expense of the lymphocytes. In the intermediate period, both total and differential count showed such marked variation as to render averages valueless but the total count usually was high. In the final period, a comparative equilibrium was reached, with a moderate increase in the total count, due entirely to lymphocytes and endothelial cells, while the granular leukocytes showed strictly normal figures. The endothelial cells were constantly increased both relatively and absolutely. The observations on the Arneth index suggest that the increase in the count is at least in part due to the removal of some factor restricting the production of white cells. No eosinophilia appeared during the course of the work.

American Journal of Public Health, Boston

July, 1920, **10**, No. 7

Compensation of Health Officers. J. A. Ferrell, New York.—p. 569.
Influenzal Pneumonia as Influenced by Dish Washing in 370 Public Institutions. J. G. Cumming, Washington, D. C.—p. 576.
Bacteria of Air in Amusement Hall. F. Huddleson and T. G. Hull.—p. 583.
Coordination of Public and Private Agencies in a State Program of Public Health Nursing. J. L. Marriner, Montgomery, Ala.—p. 588.
Sociologic Aspect of Uncinariasis. Oscar Dowling, New Orleans.—p. 595.
Epidemic of Pneumonic Plague. W. H. Kellogg, Sacramento, Cal.—p. 599.

American Review of Tuberculosis, Baltimore

July, 1920, **4**, No. 5

Present Status and Future Prospects of Tuberculosis Campaign. V. C. Vaughan, Ann Arbor, Mich.—p. 311.
*Serologic Studies on Tuberculosis. Y. Nishida and S. A. Petroff, Trudeau, N. Y.—p. 322.
Relation of Sound and Light to Interpretation of Roentgen-Ray Examinations of Chest. J. J. Singer, St. Louis.—p. 340.
Work of Commission for Prevention of Tuberculosis in France in Department of Eure-et-Loire. B. L. Wyatt, New York.—p. 347.
*Tuberculosis Situation in Germany. E. H. Bruns, Trier, Germany.—p. 370.
Elimination of Tuberculosis from Army. R. C. Matson, Portland, Ore.—p. 398.

Serologic Studies on Tuberculosis.—Sensitized animal serum having a high titer of antibodies was studied by Nishida and Petroff. It was obtained by inoculation of sheep intravenously with human tubercle bacilli. The titer was 0.0001 c.c. Dead tubercle bacilli or products of tubercle bacilli do not produce as high a titer of antibodies as the living organisms. Complement-fixing antibodies resist heat better than the antibodies for the Wassermann reaction. A temperature of 60 C. will not destroy the tuberculous complement-fixing antibodies obtained in experimental animals. Roentgeon-ray radiation, when a full erythema-producing dose is given, does not destroy the antibody, antigen, or complement. Ultraviolet rays destroy the antibodies and complement, but have slight effect on the antigen. Sunlight at 1,600 feet elevation has a slight effect on antibodies, more on complement and least on antigen. Complement-fixing antibodies are colloids. They are not lipins chemically, but are either globulins or are absorbed by the globulin. The precipitins and complement fixation have been studied parallel with each other. The two antibodies responsible for the two different reactions are probably the same, but represent two distinct phases of one and the same phenomenon.

Tuberculosis in Germany.—An investigation of the tuberculosis situation in Germany particularly in the area occupied by the American Army, was undertaken and the findings are reported by Bruns. The German methods of combating tuberculosis are about the same as those employed by the best state health organizations of our own country. In the area occupied by the American Army, tuberculosis is slightly more prevalent and the death rate relatively higher than that of Prussia. Tuberculosis in all its forms and for all ages has markedly increased during the war. Of all the etiologic factors entering into this increase, the shortage of food is most important. Undernourishment, overwork, the stress and strain of a long war and unfavorable environment prepare a fertile soil for the tubercle bacillus to flourish in all its glory. Tuberculosis patients are dying because they cannot obtain the proper nourishment so essential to the treatment of their disease. Those infected are becoming clinically tuberculous. Unquestionably the children of the poorer classes in the cities and the sick are suffering as a result of the shortage of food and should be the first to receive relief. The increase in tuberculosis is relative to the shortage of food, and improvement of the food supply is necessary for its reduction.

Annals of Surgery, Philadelphia

July, 1920, **72**, No. 1

Duties and Responsibilities of Civil Surgeon When Called to Active Military Service. G. E. Brewer, New York.—p. 1.
Empyema. A. P. C. Ashhurst, Philadelphia.—p. 12.
Operation for Empyema in Young Adults. F. E. Bunts, Cleveland.—p. 66.
Etiology of Chronic Empyema. W. Martin, New York.—p. 70.
Treatment of Chronic Empyema. G. J. Heuer, Baltimore.—p. 80.
Empyema. H. Lilienthal, New York.—p. 87.
*Fatal Postoperative Pulmonary Thrombosis. A. J. Ochsner, Chicago, C. C. Schneider, Milwaukee.—p. 91.
*Calloused Ulcer of Posterior Wall of Stomach. W. J. Mayo, Rochester, Minn.—p. 109.
Failure of Primary Rotation of Intestine (Left-Sided Colon) in Relation to Intestinal Obstruction. E. Rixford, San Francisco.—p. 114.
*Mesenteric Thrombosis; Report of Six Cases. G. G. Ross, Philadelphia.—p. 121.

Prevention of Postoperative Pulmonary Thrombosis.—Ochsner and Schneider believe that in the future it will be justifiable systematically to add the transfusion of 600 c.c. of whole blood to the preliminary treatment in a considerable proportion of cases belonging to a class which has in the past made up the list of deaths from pulmonary thrombosis and that the other precautions will be carried out with greater care. It is likely that this will result in a considerable reduction in the death rate from postoperative pulmonary thromboses. An analysis regarding the etiology of the thrombophlebitis as shown in eight tabulated cases is given.

Ulcer of Stomach and Duodenum.—From July 1, 1914, to July 1, 1919, 647 operations were performed in the Mayo Clinic on 638 patients with gastric ulcers, with an average operative mortality of 4.7 per cent. All patients who died in

the hospital following operation are statistically classified as having died from operation, without regard to the cause of death or length of time after operation. During this same five-year period 2,734 operations were performed on 2,720 patients with duodenal ulcers, with an operative mortality of 1.2 per cent. In twenty-eight of the series of 638 gastric ulcers the ulcers were multiple. Five hundred and thirty-four were located on or around the lesser curvature of the stomach, eight-five involved the posterior wall, nine were on or around the greater curvature, five were on the anterior wall, and five were not located exactly because of the emergency nature of the operation.

Pain Symptom in Mesenteric Thrombosis.—In the five cases which Ross reports pain was a prominent symptom as it is in every acute intestinal obstruction. In Case 1 the patient was taken sick ten days before admission with a severe attack of abdominal pain in the region of the umbilicus, and then becoming general throughout the abdomen. Similar (?) attacks had been noted for fourteen years prior to admission. In Case 2 the attack began suddenly, with abdominal pain, nausea, and vomiting. In Case 3 the chief complaint was pain over the whole abdomen. It is described in detail in the history as beginning seven days before admission as an epigastric pain of gradual onset, becoming worse three days after the beginning of the pain. In Case 4 the illness was described as beginning two days before admission with pain in the right lower abdomen, soon followed by vomiting. In this case the pain remained localized in the right lower abdomen. In Case 5 the patient was seized with a severe pain in the epigastrium. It is evident, then, that in all five cases a very definite history of pain is an early symptom, in only one of the instance described as of gradual onset.

Archives of Neurology and Psychiatry, Chicago

July, 1920, 4, No. 1

Neuroses of Peace. J. H. Lloyd, Philadelphia.—p. 1.
*Electromyographic Studies of Muscles During Hysterical Contraction. S. Cobb, Boston.—p. 8.
*Doubling of Spinal Cord. B. Lipshutz, Philadelphia.—p. 16.
*Acute Descending Radicular Type of Epidemic Encephalitis. I. H. Pardee, New York.—p. 24.
Four Cases of Encephalitis with Involuntary Movements. R. C. Hamill, Chicago.—p. 44.
*Differential Diagnostic Difficulties in Pernicious Anemia with Associated Mental Disorder. B. L. Jones and T. Raphael, New York.—p. 55.
*Path of Faradic Sensibility. G. P. Grabfield, Ann Arbor, Mich.—p. 63.
*Simple Method for Recording Changes in Cutaneous Sensibility. L. Feinier, New York.—p. 81.

Hysterical Muscle Contractions.—Laboratory evidence is brought forward by Cobb that the involuntary muscular contractions in hysterical conditions are physiologically similar to normal, conscious muscular contractions. The short, repeated, hysterical contractions that clinically resemble tremors can be differentiated electromyographically from such a tremor as that of paralysis agitans, or from clonus, by their slower rate and greater irregularity.

Double Spinal Cord—External examination showed no abnormalities in the case reported by Lipshutz. On opening the dural sac, however, the spinal cord was found divided in its caudal portion into two distinct symmetrical halves, the two entirely enclosed in a single dural sheath. Similarly, the arachnoid stretched across as a single membrane. The bifurcation began at the caudal border of the eleventh thoracic vertebra and extended to the caudal limit of the cord, forming two independent symmetrical halves. The caudal limit of each half was at the level of the cephalic border of the first sacral vertebra. The conus medullaris of each half was independent and at the level of the third sacral vertebra, the halves united into a single large filum terminale, the latter coursing caudally for a distance of 5 cm. to gain attachment to the dorsal surface of the first segment of the coccyx. The cervical and thoracic portions of the cord were normal in appearance. The peripheral nerves cephalic and caudal to the bifurcation presented no variations in the formation of the different plexuses and in their normal peripheral distribution. The inner surface of the dura at the level of the caudal border of the twelfth thoracic vertebra likewise showed an interesting and rare anomaly. Where the division of the cord was total, a distinct band of dura was found projecting between the two halves of the cord. The band of dura was directed ventrodorsally and had a first attachment of 1 cm. on both the ventral and dorsal surfaces of the dura. It was of an hour-glass shape and was placed in the sagittal plane. This band or fold was clearly a part of the dura, being of the same texture and consistency. In the unopened dura it seemingly caused no pressure on the halves of the cord. The division of the spinal cord began 0.5 cm. cephalic to the dural band noted above.

Acute Radicular Epidemic Encephalitis.—Five cases are reported by Pardee, but as all the patients recovered, only a clinical study could be made. The chief symptoms were: (1) sharp lancinating root pains; (2) paresthesia; (3) muscular spasms; (4) hyperesthesia; (5) delirium, and (6) fever.

Pernicious Anemia Mistaken for Arteriosclerosis.—Jones and Raphael suggest that probably more cases of pernicious anemia are mistaken for arteriosclerosis than are generally recognized. Therefore, they advise that patients with doubtful cases of arteriosclerosis, especially those with a history of remissions, should, as a routine procedure, have frequent blood counts made, and neurologic examinations for cord changes. Careful history taking may reveal the so-called "prepernicious" symptoms in cases that otherwise might be mistaken for arteriosclerosis.

Path of Faradic Sensibility.—The evidence collected by Grabfield has been largely gathered from a study of cases presenting certain neurologic lesions or psychiatric conditions, and suggests that faradic stimuli of liminal value probably follow the path of the thermal fibers, while markedly supraliminal stimuli may use other paths. The postrolandic cortex is in all likelihood the arrival platform for these impulses.

Recording Cutaneous Sensibility.—Feinier describes charts used by him and others to record changes in cutaneous sensibility and which can be interpreted easily.

Bulletin of Medical and Chirurgical Faculty of Maryland, Baltimore

April, 1920, 12, No. 7

Development of Medical Department, U. S. Army. M. W. Ireland, Washington, D. C.—p. 108.
Child and State. H. L. K. Shaw, Albany, N. Y.—p. 111.

California State Journal of Medicine, San Francisco

July, 1920, 18, No. 7

Neglected Opportunities. H. A. L. Ryfhogel, San Francisco.—p. 242.
Campaign Issues. D. A. Smith, Santa Barbara.—p. 245.
*Formication Test in Peripheral Nerve Injuries — Its Interpretation. C. L. Tranter, San Francisco.—p. 248.
Experiences in Testicle Transplantation. L. L. Stanley, San Quentin.—p. 251.
Uretero-Pyelography and Cystography. G. G. Reinle and E. S. Depuy, Oakland.—p. 254.
Problem of Hospital Dietitian. A. F. Morgan and A. H. Metcalf, Berkeley.—p 255.

Formication Test of Nerve Injuries.—Tranter maintains that the formication test gives definite evidence of regeneration long before muscle reflexes appear or before voluntary motion becomes possible. It frequently tells when a suture has been unsuccessful, as may happen when the ends pull apart after having been sutured under some unavoidable tension. It often indicates the position of a neuroma under a long scar and helps in locating the nerve ends at operation and in telling whether a suspicious palpable mass is a neuroma or not, or in revealing a second unsuspected lesion, and finally, it is of great value in helping to keep up the morale of the patient during the long period before the reappearance of voluntary motion.

Canadian Medical Association Journal, Toronto

July, 1920, 10, No. 7

Focal Infection. C. K. P. Henry.—p. 593.
Treatment of Club Foot. W. S. Verall.—p. 605.
Scoliosis. A. M. Forbes.—p. 609.
Work of Psychopathic Hospital. A. G. Morphy.—p. 616.

Advances in Knowledge about Blood Cells During Past Six Years. O. C. Gruner.—p. 624.
Medical Education. J. J. R. Macleod.—p. 638.
Fibromyoma; Radium Treatment. E. S. Hicks.—p. 652.
Incipient Diabetes Mellitus. E. H. Mason and C. G. Sutherland.—p. 657.
Heat and Infant Mortality. A. Jobin.—p. 661.

Colorado Medicine, Denver

July, 1920, **17**, No. 7

Management of Ununited Fractures. H. G. Wetherill and C. Powell, Denver.—p. 173.
Medical Work of Federal Board for Vocational Education. A. Filmer, Washington, D. C.—p. 177.
Misleading Conditions in Acute Suppurative Otitis Media. J. J. Pattee, Pueblo.—p. 180.
*Teaching Simplified Infant Feeding. F. P. Gengenbach, Denver.—p. 184.
Relation of Hernia to Military Service. W. W. Grant, Denver.—p. 190.

Simplified Infant Feeding.—The salient features of the method recommended by Gengenbach are: first, boiling the milk; second, a method for determining the amount of each feeding; and, third, a method of calculating the amount of each ingredient in the feeding. Knowing that many infants cannot at the beginning digest cow's milk very well, it is suggested that the feedings at first should containly only 1 ounce of whole milk for every pound of body weight, and that this amount be later gradually increased to 1½ ounces. An infant, 3 months old, weighing 10 pounds, requires 450 calories in daily feed. On a three-hour feeding schedule it is to receive usually seven times 4 ounces, or 28 ounces. Of this amount, 10 ounces are to be in the form of whole milk, and the other 18 ounces in plain or cereal water. These 10 ounces of whole milk (from 20 to 21 calories to the ounce) represent about 200 of the 450 calories required. The remainder are furnished by the carbohydrate added, either sugar alone, or sugar and starch, the latter in the form of a cereal dilution. When tolerated, cereal dilutions are preferable. Barley water is ordinarily used for this purpose, using three level tablespoonfuls of barley flour or two rounding tablespoonfuls of pear barley to a quart of water. The 18 or 20 ounces to be used represent about 60 calories. The remaining 190 calories are provided in the form of sugar, and as 1 ounce of table sugar, represents 120 calories, and 1½ ounces of sugar to the day's feeding.

Endocrinology, Los Angeles

April-June, 1920, **4**, No. 2

*Hypophyseal Disorders with Special Reference to Froelich's Syndrome (Dystrophia Adiposogenitalis). H. G. Beck, Baltimore.—p. 185.
*Relationship between Thyroid and Parathyroids. S. Vincent and J. S. Arnason, Winnipeg, Canada.—p. 199.
Gynecomastia. F. S. Hammett, Philadelphia.—p. 205.
*Fright as a Cause of Epilepsy and How It Acts. E. A. Tracy, Boston.—p. 221.
*Case of Complete Amenorrhea with Fulminating Symptoms: Surgical Demonstration of Ovarian Etiology. C. Dederer, Bay City, Mich.—p. 229.

Operations on Hypophysis.—Beck says that except for the fact that operations on the hypophysis are fraught with considerable danger, the mortality rate being from 10 to 16 per cent., the indications for surgical treatment of disease of this gland would be practically comparable to those for diseases of the thyroid. The complete removal of the gland or any process which totally destroys the substance will lead to the condition known as cachexia hypophysopriva; operations, therefore, are restricted largely to tumors and are resorted to more frequently in conditions associated with hyperfunction.

Conversion of Parathyroids into Thyroid Tissure.—The series of experiments reported on by Vincent and Arnason do not lend support to the view that parathyroids left behind after thyroidectomy become converted into thyroid tissue.

Fright as Cause of Epilepsy.—It is maintained by Tracy that severe fright can produce idiopathic epilepsy in a child without a predisposition to the disease. It acts by causing a hypertonia of the sympathetic nerves. A hypertonia of sympathetic nerves was the evident beginning of the disease in a case reported.

Relationship Between Amenorrhea and Ovary.—A case is reported by Dederer in which a patient suffered from amenorrhea for about fourteen years following the surgical removal of parts of both breasts, for reasons not now known. Sectioning of the sympathetic nerves to the ovaries and resection of the adventitia of the ovarian vessels was followed by the establishment of normal menstruation.

Florida Medical Association Journal, St. Augustine and Jacksonville

June, 1920, **6**, No. 12

The New Era. Wm. E. Ross, Jacksonville.—p. 220.

Indiana State Medical Association Journal, Fort Wayne

July 15, 1920, **13**, No. 7

*Case of Temporary Incarceration of Transverse Colon Within Bilateral Hernial Sacs. D. J. Royer, Fort Wayne.—p. 227.
*Epidemic Encephalitis in Northern Indiana. R. V. Hoffman, South Bend.—p. 228.
The Physician; the Training of an Intern. F. B. Wynn, Indianapolis.—p. 232.
Acute Appendicitis. R. C. Ottinger, Indianapolis.—p. 235.
Autogenous Bone Graft. L. T. Rawles, Fort Wayne.—p. 238.

Transverse Colon Incarcerated in Hernia Sac.—Royer's patient gave a history of "stomach and bowel trouble" dating back twelve or fifteen years. He had no gastric or intestinal symptoms, but complained of a feeling of distress in the left side of his abdomen in the left lumbar region. He said there was something in there that would not let the food pass out of his stomach. He had no constipation, yet he said the stool was very small. At a variable time after eating this distress would come on and he would have to use an enema to obtain relief. For some time past he had been using rectal dilators nearly every morning, and thought they were a great help. His trouble was attributed to his work, i. e., lifting and carrying heavy articles. He also mentioned that he had a small lump in each groin, one of which he had had for several years, while the other had appeared within the past year. Roentgen examination of the gastro-intestinal tract revealed a transverse colon apparently markedly dropped, and manipulation was attempted to ascertain the degree of mobility. Instead of displacing the intestine upward as anticipated, it was found to be firmly bound down behind the pubes. On digital examination, bilateral hernias were found. At the end of a week, another barium meal was given to study further the incarcerated colon, and to determine accurately the degree of stasis present. At the twenty-four hour period, instead of finding the expected condition, the transverse colon was in a practically normal position with no evidence of the hernias. The small bilateral hernial sacs were repaired. The case emphasizes the advisability of a second examination for verification where uncommon conditions are found.

Treatment of Epidemic Encephalitis.—The use of frequent spinal drainage, and the employment of hypertonic solutions intravenously in selected instances of epidemic encephalitis are advocated by Hoffman as an addition to our therapeutic armamentarium.

Iowa State Medical Society Journal, Des Moines

July 15, 1920, **10**, No. 7

Some Typical Recoveries in Iowa from Chronic Convulsive Toxemia (Epilepsy) Following Surgical Correction of Abdominal Viscera. C. A. L. Reed, Cincinnati.—p. 204.
Clinical Significance of Bacteriologic Examination of Accessory Nasal Sinuses and Ears. M. Armstrong, Iowa City.—p. 209.
Chronic Sinus Infection. O. Wolfe, Marshalltown.—p. 212.
Thyroid. C. H. Magee, Burlington.—p. 216.

Journal of Industrial Hygiene, Boston

July, 1920, **2**, No. 3

Health Hazards in Pearl Button Industry. E. G. Birge and L. C. Havens, Iowa City.—p. 81.
Disposition of Tuberculosis in Industrial Organization. J. S. Billings, New York.—p. 90.
Anthrax. T. M. Legge, London, England.—p. 96.
Industrial Hygiene in High School of Commerce. M. Levine, New York.—p. 103.
Housing Problems in Great Britain and Ireland. J. S. Hodgson, Boston.—p. 106.
Phthisis and Occupation. T. Oliver, Newcastle-upon-Tyne.—p. 115.

Journal of Laboratory and Clinical Medicine, St. Louis

July, 1920, 5, No. 10

*Leukoplakia of Pelvis of Kidney; A Study in Metaplasia. DeW. G. Richey, Pittsburgh.—p. 635.
*Chemical Changes in Blood in Disease. V. C. Myers, New York.—p. 640.
*Bacillus Influenza in Normal and Pathologic Throats. L. Arnold, Nashville, Tenn.—p. 652.
*Localization of Hallucinations. H. I. Gosline, Howard, R. I.—p. 657.
*Alkalimetry of Whole Blood. J. B. Rieger, Detroit.—p. 668.
Variations in Wassermann Reaction. E. R. Wilson, Los Angeles.—p. 670.
Leukocytes in Anaphylaxis of Serum Sickness. J. Rosenbloom, Pittsburgh.—p. 671.
Machine for Shaking Blood Counting Pipets. R. L. Haden, Detroit. —p. 672.
Method of Demonstrating Gastric Movements on a Small Animal. T. L. Patterson, Iowa City.—p. 674.

Leukoplakia of Kidney Pelvis and Ureter.—Leukoplakia of the pelvis of the kidney and ureter is regarded by Richey as being a pathologic entity which seeks logical explanation on the basis of true metaplasia, entailing a transformation from the normal transitional epithelium, even presenting a superficial layer of keratin. It would appear that the absence of a demonstrable membrana propria, plays an important rôle in the metaplastic process by permanently altering the environment of the lining cells. The loss of the basement membrane is the outcome of repeated insults wrought by long continued trauma, either inflammatory, mechanical or both. It is possible that a certain number of cases of pyelitis are refractory to appropriate treatment as a result of leukoplakia of the pelvic mucosa. As in the buccal cavity, bronchi, esophagus, gallbladder, urinary bladder, prostate, fundus uteri and elsewhere, leukoplakia of the renal pelvis and ureter may be a potential site for subsequent malignant metamorphosis.

Studies on Blood Sugar.—The general subject of blood sugar and the values for blood sugar and diastatic activity in normal individuals, diabetics, nephritics, and endocrine cases are discussed by Myers.

Prevalence of Influenza Bacillus.—Observations were made by Arnold on the prevalence of *B. influenzae* in average normal throats, in cases of acute rhinitis, and in throats of patients suffering from "influenza"—which was epidemic in Nashville, Tenn., in February, 1920. Avery's sodium oleate method was used. Of eighty apparently normal throats examined, twenty-eight were positive, making 35 per cent. carriers of *B. influenzae*. Of forty-five cases of acute pharyngitis and rhinitis examined, thirty-five were positive, making 77.7 per cent. positive. One hundred and four cases were selected at random from cases diagnosed as "influenza" in the acute stage. Ninety were positive, making 87.5 per cent. positive. *B. influenzae* in nasal secretions from acute rhinitis, directly exposed to the air, are not viable if planted on artificial culture medium after ten hours; if exposed to light, but desiccation being prevented, they are viable for twenty-four hours anyway.

Psychology of Hallucinations.—On the basis of laboratory psychology, Gosline says that all mental functions can be reduced to the simple processes, sensation, association, reaction and inhibition. On the basis of this psychology the hallucinations are reduced to simple processes and the results are correlated with the anatomy of the nervous system. Psychology is carried into psychopathology for the purpose of making anatomic localizations. Gosline attempts to conclude from the patient's symptoms as to whether the pathologic process is an irritative one or a destructive one.

New Method of Alkalimetry.—Rieger describes in detail a method of alkalimetry which he says gives promise of service in the early stages of acidosis, the prognosis of the more severe grades and the early recognition of impairment of renal function.

Journal of Orthopaedic Surgery, Lincoln, Nebr.

July, 1920, 2, No. 7

Open Operation for Congenital Dislocation of Hip. H. P. H. Galloway, Winnipeg, Can.—p. 390.
Variations in Anatomic Structure of Lumbar Spine. J. E. Goldthwait, Boston.—p. 416.

Journal of Pharmacology and Experimental Therapeutics, Baltimore.

June, 1920, 15, No. 4

Anurias Occurring in Normal Animals During Use of General Anesthetics. W. deB. MacNider, Chapel Hill, N. C.—p. 249.
*Local Anesthetic Actions of Saligenin and Other Phenyl Carbinols. A. D. Hirschfelder, A. Lundholm, and H. Norrgard, Minneapolis. —p. 261.
Antagonistic Actions of Epinephrin and Potassium Chlorid on Tonus and Tonus Waves in Excised Terrapin Auricles. C. M. Gruber, Boulder, Colo.—p. 271.
*Pharmacologic Studies on Arsphenamin. M. I. Smith, Washington, D. C.—p. 279.
*Perfusion of Medulla of Turtle. A. D. Bush, University, N. D.—p. 297.
Mechanism of Toxic Action of Cyanogen Chlorid. C. I. Reed, Lawrence, Kan.—p. 301.
*Tyramin as a Morphin Antagonist. H. G. Barbour and L. L. Maurer, New Haven, Conn.—p. 305.
Blood Volume and Blood Volume Methods. P. D. Lamson and T. Nagayama, Baltimore.—p. 331.
*Presence of Histamin in Extracts of Posterior Lobe of Pituitary Gland and on Preliminary Experiments with Pressor Constituent. J. J. Abel and T. Nagayama, Baltimore.—p. 347.
Histamin and a Histamin-Like Substance as Decomposition Products of Albumoses. T. Nagayama, Baltimore.—p. 401.

Anesthetic Value of Saligenin.—From all the facts presented by Hirschfelder and his associates, it would appear that saligenin represents the least toxic or irritant and best anesthetic of all the phenylcarbinols thus far studied by them, that it is many times less toxic than procain, apothesine and similar anesthetics, and that it is well suited for use in practical surgery. Although weak solutions of saligenin are devoid of anesthetic effects the epithelial mucous membranes, strong solutions exert a definite numbing effect. This is especially marked when freshly prepared 12 per cent. solutions are used. When a 12 per cent. solution of saligenin is applied to the mucous membranes of the mouth or nose, a definite dulling of sensation results.

Action of Arsphenamin on Circulation.—The mechanism of the action of arsphenamin on the pulmonary circulation, and its relation to the other circulatory effects produced by arsphenamin was studied by Smith. Experimental data on the toxicity of arsphenamin following continuous intravenous injection of various preparations into dogs are also presented. A few preliminary observations relating to the chemical behavior of arsphenamin toward serum are discussed, and the relation of this to the circulatory phenomena produced by this drug is pointed out. The rise in pulmonary pressure produced by intravenous injections of arsphenamin is shown to be due to an obstruction of the pulmonary vessels. The nature of the obstruction is chiefly mechanical blocking, or to a constricting action of the pulmonary vessels, depending on the amount of alkali used in making the solution. The cardiac dilation following the intravenous injection of arsphenamin does not appear to be a direct effect of the action of the drug, but rather secondary to the pulmonary obstruction, causing the right heart to work under undue strain and, secondarily, to dilate.

Action of Epinephrin on Cardio-Inhibitory Center.—Bush states that epinephrin does not seem to exert a registrable influence on the cardio-inhibitory center of the striped turtle.

Tyramin as Morphin Antagonist.—The respiratory stimulants commonly employed to antagonize morphin depression (caffein, atrpin, scopolamin, narcotin, etc.), Barbour and Maurer claim do not posses the advantage of ecbolic action which is exhibited by tyramin. Tyramin (from 1.6 to 20 mg. per 100 gm.) antagonizes the respiratory effects of morphin (from 1 to 1.8 mg. per 100 gm.) when the two are injected in the same solution. The most complete antagonism was noted when 1 mg. of morphin was injected with from 6 to 20 mg. tyramin, the average maximum decrease from normal volume amounting to only one fifth. Simultaneous injection of morphin and tyramin in separate subcutaneous regions results in a greater exhibition of respiratory depression than when the drugs are given in the same solution but this is followed promptly by an unusually marked antagonism. To account for all of the results obtained it appears necessary to assume both a nonacid and an acid factor in the stimulating action of tyramin.

Histamin in Posterior Lobe of Pituitary.—Infundibular extracts made with care from fresh glands, that is to say, with the avoidance of long boiling or of long exposure to acids Abel and Nagayama found contain a small, but readily detectable amount of histamin. Extracts such as are employed in therapeutics contain larger quantities of this amin. It was estimated in one experiment, that nearly, if not quite, 2 mg. of histamin were present in eighty 1 c.c. phials of one of the more powerful commercial extracts. A 1 c.c. phial would, therefore, contain approximately 0.025 mg. of this powerful base.

Kansas Medical Society Journal, Topeka

July, 1920, **20**, No. 7

Polycythemia Rubra (Erythremia); Report of a Case. W. A. Baker, Leavenworth.—p. 183.
Epilepsy. O. S. Hubbard, Parsons.—p. 188.
Tuberculosis. J. D. Gibson, Denver, Colo.—p. 191.

Kentucky Medical Journal, Bowling Green

July, 1920, **18**, No. 7

Pyelitis. W. T. Briggs, Lexington.—p. 238.
Appendicitis in Children. B. F. Robinson, Berea.—p. 242.
Prevalence of Hookworm in Kentucky. E. M. Trabue, Pembroke.—p. 243.
Physical Examination of Patient. J. M. Morris, Berea.—p. 246.
Man and Microscope. A. Baker, Berea.—p. 249.
Tuberculosis Clinic. O. O. Miller, Louisville.—p. 252.
Early Diagnosis of Valvular Heart Disease. C. W. Dowden, Louisville.—p. 256.

Laryngoscope, St. Louis

July, 1920, **30**, No. 7

Local Diagnostic Value of Tuning Fork Tests. A. Retjo, Budapest, Hungary.—p. 408.
Technic of Tonsillectomy under Local Anesthesia. M. M. Cullom, Nashville, Tenn.—p. 419.
*Case of Multiple Bone Formation in the Tonsils. J. E. Calhoun, Dubuque, Iowa.—p. 428.
Tonsillectomy in Adult under Local Anesthesia by the Sluder Method. R. McKinzey, Memphis, Tenn.—p. 429.
Germ Life; Mastoid Bone as a Living Medium. A. Kahn, New York. p. 434.
Diagnosis of Brain Abscess. L. Casamajor, New York.—p. 436.
Rupture of Tympanum from Shell Explosions. F. Chavanne, Lyons, France.—p. 441.

Bone Formation in Tonsils.—In the case cited by Calhoun, numerous small, hard white masses found in both tonsils were proved microscopically to be bone.

Medical Record, New York

July 24, 1920, **98**, No. 4

*Evolution of a Children's Clinic. F. H. Richardson, Brooklyn.—p. 127.
Electrochemism in Etiology and Therapeusis of Cancer. E. P. Robinson, New York.—p. 133.
Evaluation of Minor Surgery. M. W. Ware, New York.—p. 138.
*Eczema of Vermilion Border of Lips. D. W. Montgomery and G. D. Culver, San Francisco.—p. 141.
*Intestinal Parasites as a Cause of Appendicitis: Report of a Case. W. W. Cress, Mare Island, Calif.—p. 143.
*Prostatic Backache. A. Gottlier, San Francisco.—p. 144.
Mental Conflict. H. Laveson, New York.—p. 145.
*Benzyl Benzoate in Persistent Hiccup. D. I. Macht, Baltimore.—p. 146.

July 31, 1920, **98**, No. 5

Some Phases of Blood Chemistry of Practical Use to Practitioner. H. A. Higley and C. W. Field, New York.—p. 169.
Congenital and Acquired Heart Conditions which Give Rise to Symptoms; Their Significance and Treatment. O. S. Wightman, New York.—p. 173.
Vegetable Protein Treatment of Pulmonary Tuberculosis. E. Zueblin, Cincinnati.—p. 176.
Roots of Evil. W. B. Konkle, Montoursville, Pa.—p. 179.
Malnutrition from Underfeeding in a Two and One-Half Year Old Child. B. K. Rachford, Cincinnati.—p. 181.
Dreams as Cause of Death and Disease. M. Chideckel, Baltimore.—p. 182.
Cause of Roentgen Ray Burns. J. Remer and W. D. Witherbee, New York.—p. 183.
Suggestion for Dietetic Prescription Blank. E. E. Cornwall, Brooklyn.—p. 185.
Alcohol: Its Status Quo Ante, Never! D. Nathan, Norristown, Pa.—p. 186.

Children's Clinic.—This paper sets forth, in a mixture of history and prophecy, the evolution of a pediatric dispensary in its progress from average toward (not to) the ideal.

Eczema of Lip.—Among the cases of eczema of the lip Montgomery and Culver describe a group of dry, scaly, precancerous affections. A dry, scaly line forms from side to side across the lip, situated about midway between the cutaneous border and the summit. It may stretch from one corner of the mouth clear across to the other, or it may be broken. It may be a roughened, brown line of dry epithelium, or it may be a narrow, brown, facetted line. The authors believe this line to be the same one seen in the "rosebud mouth" of the infant, and to represent the junction, in the fetus, of the mucous membrane resembling the cutaneous surface with the mucous membrane resembling that of the oral cavity. It is in this line, when roughened, that an epithelioma is apt to develop, and the recognition of this line is of importance because the epithelial degeneration, of which the epithelioma represents the maximum degree, extends out along it for a vry considerable distance on each side of the epithelioma proper. Therefore, any operation failing to take this into consideration is liable to be a failure as not being inclusive enough.

Lamblia Cause of Appendicitis.—Cress reports a case of appendicitis which he believes was caused by Lambia intestinalis. The appendix was not examined microscopically but the stools contained many of these parasites.

Backache of Prostatitis.—In the course of chronic prostatitis, Gottlier says low backache is a frequently complained of symptom. The patient attributes it, as a rule, to "kidney trouble" although the pain is located in the sacral, sacrolumbar and sacroiliac regions of the spine, and is aggravated by spinal motion and a lasting upright position. The treatment should be constitutional and local to the prostate and the back. The most effective treatment of the back is the application of heat followed by ionization, diathermy, vibration and massage, and support to the pelvis and back, as well as correction of any possible foot abnormality. A canvas corset or pelvic belt is worn to rest and support the strained muscles.

Benzyl Benzoate in Hiccup.—Macht has found benzyl benzoate to be an invaluable medicine in the treatment of persistent hiccup of both adults and children. Not only has it been found useful in allaying the ordinary mild forms of hiccup so common in infants, but the drug has been found to be efficient in stopping those forms of hiccup termed pernicious, that is, those cases in which the phenomenon persisted for long periods of time, from twenty-four hours to several days, and in which the singultus was unaffected by all other forms of medicinal treatment, both external and internal. Macht believes that benzyl benzoate also is of diagnostic value in differentiating between the hiccups of a purely central origin, on the one hand, and those which are due to some peripheral origin, on the other. Inasmuch as benzyl benzoate exerts its chief effect peripherally on the smooth muscle structures, the author is inclined to believe that this drug may be most useful in the treatment of hiccups of peripheral origin. The benzyl benzoate exerts its action best when given in a 20 per cent. solution in alcohol. Of this solution the patient is directed to take from 20 to 40 drops in water or milk. The author has not found it either convenient or advantageous to administer the drug in suspension in various elixirs or syrups, and administration in capsules has been found by him in some cases to produce local irritation, and in others to render the therapeutic action too slow. To children the solution can be conveniently administered in sugar water or milk.

Michigan State Med. Society Journal, Grand Rapids

July, 1920, **19**, No. 7

Changes in Relations of Public and Medical Profession. C. H. Baker, Bay City.—p. 263.
What Should be the Attitude of Physicians Toward Health Insurance? F. R. Green, Chicago.—p. 273.
Compulsory Health Insurance; a Modern Fallacy. E. H. Ochsner, Chicago.—p. 283.
Compulsory Health Insurance is a Sign of Economic Degeneration. G. L. Apfelbach, Chicago.—p. 288.
Health Insurance, Considered from an Economic Standpoint. W. D. Chapman, Silvis, Ill.—p. 292.
Community Hospital Training School. J. G. R. Manwaring, Flint.—p. 295.

August, 1920, **19**, No. 8

Immediate Opportunities Open to Medical Profession. E. L. Eggleston, Battle Creek, Mich.—p. 355.
Infections of Upper Urinary Tract. D. N. Eisendrath, Chicago.—p. 356.
Lethargic Encephalitis Symptoms and Physical Signs. W. D. Mayer, Detroit.—p. 360.

Some Points in Roentgengraphic Examination of Chest with Particular Reference to Lungs. J. H. Dempster, Detroit.—p. 364.
Traumatic Chest Surgery. R. E. Balch, Kalamazoo, Mich.—p. 369.
*Sphenopalatine Ganglion Headaches. R. A. Barlow, Rochester, Minn. —p. 371.
*Case of Wound Diphtheria. G. J. Curry, Flint, Mich.—p. 376.

Sphenopalatine Ganglion Headaches.—The twelve cases cited by Barlow show that there is ample evidence to demonstrate the existence of a sphenopalatine ganglion syndrome and to distinguish it from the so-called migraine headache. The results of treatment in thus type of headache are sufficiently encouraging to warrant its study and investigation. Barlow believes that eventually a form of operative treatment will be developed such as is now used in the gasserian ganglion cases, which will offer more complete and permanent relief. In the meantime, by conservative measures many patients can be relieved whose suffering may even result in an economic loss to society.

Wound Diphtheria.—In Curry's case, the condition developed in a suppurating wound following the excision of the right fibula for chronic infective osteomyelitis, of twenty years' standing. Eighty-one days elapsed from the time of the first positive culture until the last negative one, the first fifty-six days of this period being the active stage of the disease.

Military Surgeon, Washington, D. C.

July, 1920, **47**, No. 1

Modern Military Medical and Surgical Reconstruction and Measures of Cooperation Practiced by Medical Department of Army and Federal Board for Vocational Education. F. Billings, Chicago.—p. 1.
Spectacles for Soldiers; Comparison of American and German System of Supply. R. A. Fenton, Portland, Ore.—p. 14.
Relation of Defective Mental and Nervous States to Military Efficiency. F. G. Norbury, Springfield, Ill.—p. 20.
Compound Fractures Treated by Bone Graft. L. J. Owen, Ft. Sheridan, Ill.—p. 40.
Some Newer Work on Nephritis. E. D. Kremers, Ft. Sheridan, Ill.—p. 48.
Operation of Medical Division of Air Service Since Signing of Armistice. A. E. Truby and J. Dibble.—p. 67.
Malaria Drainage Operations at Port of Embarkation. W. B. Herms, Newport News, Va.—p. 81.
Some Commonly Misapprehended Points in Diagnosis of Pellagra. J. Goldberger.—p. 94.
Lessons of War Which May be Applicable to Civil Practice. J. Smyth. —p. 100.
Chronic Urethritis and Prostatitis, Dependent on Colon Bacillus Infection. C. E. Verdier.—p. 109.

Missouri State Medical Association Journal, St. Louis

July, 1920, **17**, No. 7

Use of Radium in Carcinoma of Face, Jaws and Oral Cavity. E. Fischel, St. Louis.—p. 267.
Actual Cautery in Treatment of Superficial Cancers. C. F. Sherwin, St. Louis.—p. 269.
Modern Treatment of Malignancies. L. A. Marty, Kansas City, Mo. —p. 271.
Inoperable Cancer. W. E. Leighton, St. Louis.—p. 273.
Treatment of Syphilis. E. L. Spence, Fulton, Mo.—p. 276.

Nebraska State Medical Journal, Norfolk

July, 1920, **5**, No. 7

Rights of Patient. H. W. Orr, Lincoln.—p. 185.
*Intestinal Indigestion in School Children. H. M. McClanahan, Omaha. —p. 189.
Malignancies of Mouth and Neck. E. H. Skinner, Kansas City, Mo.—p. 194.
Value of Lumbar Puncture as Diagnostic and Therapeutic Procedure. A. A. Johnson, Omaha.—p. 197.
Intra-Abdominal Injection of Oxygen as an Aid in Roentgen-Ray Diagnosis. C. H. Ballard, Omaha.—p. 199.

Intestinal Indigestion in Children.—In this paper is presented a review of the histories of ninety-six children, ranging in age from 6 to 12 years. The chief symptoms in all of these cases pertained to the gastro-intestinal system. In none was there any organic disease. The outcome of the cases verified the conclusion that perverted function, what might be termed functional pathology of the digestive organs, was the cause of the symptoms. Among the predisposing causes mentioned by McClanahan, are heredity (in twenty-four cases in this series, there was a history of some nervous condition in one or both parents), home conditions, and the habits of the child also figure in the etiology. Contributing factors are: tonsils and adenoids, diseased teeth, an excess of the acid type of foods in the diet, and anatomic conditions. Treatment along common sense lines as suggested by roentgen-ray findings resulted most satisfactorily in probably 90 per cent. of the cases. McClanahan insists that a thorough examination of the child be made before treatment is begun. In the diet he has included the cereals, milk, meat only once a day, potatoes, rice and tapioca and such vegetables as parsnips, carrots, beets, cauliflower, squash, lettuce, celery, fruit, both cooked and raw. The diet is varied with the individual case. Tea and coffee are not allowed. Intelligent cooperation of the mother, good will and obedience of the child are aids in carrying out proper treatment. Plenty of sleep and rest are also essential. Drugs have an important place in the treatment, but often they are used to excess. For the relief of constipation McClanahan gives the following powder once a week; resin podophyllin, 1/10 grain; rhubarb, 2 grains; sodium bicarbonate, 5 grains. This is given at bedtime, and the following morning before breakfast a cathartic is given, usually sodium sulphate in hot water. A little lemon juice added to this will make it more palatable. When the stools were hard, liquid petrolatum was of advantage in fifteen cases; in five it produced no result. Another cathartic is a combination of equal parts of fluidextract of senna and aromatic cascara, from one-half to one teaspoonful, at bedtime. In cases of meteorism, milk of magnesia, ½ ounce at bedtime, is of apparent benefit. A bitter tonic after meals has given good results or tincture of nux vomica alone. In cases complicated by secondary anemia, Blaud's pill, 3 grains, morning and night is of value. In three cases with considerable abdominal distention associated with pain, the abdominal binder gave decided relief.

New Orleans Med. and Surgical Journal, New Orleans

August, 1920, **73**, No. 2

Importance of Early Recognition and Treatment of Glaucoma. D. T. Atkinson, San Antonio, Texas.—p. 50.
Spastic Constipation. J. M. Perret, New Orleans.—p. 53.
Leprosy in United States. I. Dyer, New Orleans.—p. 57.
Case of Multiple Lesions in Leishmaniosis. O. Torres, Bahia, Brazil. —p. 61.

New York State Journal of Medicine, New York

July, 1920, **20**, No. 7

*Antiscorbutic Vitamin. A. F. Hess, New York.—p. 209.
*Fat-Soluble Vitamin. L. B. Mendel, New Haven, Conn.—p. 212.
Water-Soluble Vitamin. T. B. Osborne, New Haven, Conn.—p. 217.
Comparative Study of Diagnosis of Specimens from Cases of Typhoid Fever, Tuberculosis and Diphtheria in Different Laboratories of New York State. F. Finley and J. S. Lawrence, Albany, N. Y.—p. 226.
Surgical Treatment of Hyperthyroidism — Relation Existing between Amount of Gland Removed and Permanency of Relief. G. E. Beilby, Albany, N. Y.—p. 230.

Antiscorbutic Vitamin in Canned Tomato.—Canned tomato, Hess says, is the most serviceable antiscorbutic for artificially fed infants. It is well borne, comparatively inexpensive, and is available. Canned tomatoes may be regarded, from a nutritional standpoint, as a palatable solution of the three vitamins. Hess recommends it unreservedly in doses of 1 ounce a day. By substituting it for orange juice a great saving has resulted.

Fat-Soluble Vitamin in Butter.—About 0.1 gm. butter fat fed daily in addition to an otherwise adequate diet Mendel says suffices to enable rats to reach adult size before they show symptoms of nutritive decline that are remediable by further increments in this supply of fat-soluble vitamin. With feeding results were even more favorable, incipient decline being averted until a later period. Even more striking have been the results with dried tomato which served, in daily doses of approximately 0.1 gm., as the source of fat-soluble vitamin in a period of fourteen months within which the animals rapidly grew to large adult size. These illustrations indicate the relative richness of some of the edible vegetable products in fat-soluble vitamin.

Northwest Medicine, Seattle

July, 1920, **10**, No. 7

Diseases of Ethmoid and Sphenoid Sinuses. J. H. Harter, Seattle.—p. 165.
Diagnostic Value of Estimation of Basal Metabolic Rate. J. E. Elst, Portland, Ore.—p. 171.

Interpretation of Basal Metabolism Determinations; Hypothyroidism and Hyperthyroidism. B. N. Wade, Portland, Ore.—p. 175.
Medical Aspects of Exophthalmic Goiter. C. F. Morsman, Spokane.—p. 178.
Goiter. A. A. Matthews, Spokane.—p. 183.

Oklahoma State Medical Ass'n Journal, Muskogee

July, 1920, 13, No. 7

Mediastinal Neoplasm. H. T. Price, Tulsa.—p. 247.
Diagnosis of Cancer. D. N. Eisendrath, Chicago.—p. 251.
Paget's Cancer: Eczema of Nippie, or Paget's Disease. M. E. Stout, Oklahoma City.—p. 253.
Acidosis. C. J. Fishman, Oklahoma City.—p. 254.

Pennsylvania Medical Journal, Athens

July 1, 1920, 23, No. 10

Blood Transfusion. W. H. Furness, and W. E. Lee, Philadelphia.—p. 577.
Roentgen Ray as Aid to Diagnosis of Chest Conditions. A. Z. Ritzman, Harrisburg.—p. 579.
Conservative Operation on Nasal Accessory Sinuses. J. J. Sullivan, Scranton.—p. 581.
Care of Premature Baby. E. L. Meyers, Wilkes-Barre.—p. 584.
Child Welfare in Pennsylvania. D. Child, Philadelphia.—p. 588.
Phlyctenular Disease and Its Cause. H. M. Langdon, Philadelphia.—p. 590.
Muscular Imbalance—Its Relation to Eye Strain and Correction. F. N. Emmert, Chambersburg.—p. 592.
Importance of Reconstruction in Civil Accident Surgery. J. B. Lowman, Johnstown.—p. 594.
Hospital Treatment of Compensation Cases. D. D. Test, Philadelphia.—p. 594.
Joseph Price. A. P. Butt, Elkins, W. Va.—p. 597.
Hysteric Paralysis. I. G. Shoemaker, Reading.—p. 601.
Fractures Between Ankle and Middle of Tibia. W. H. Ammarell, Birdsboro.—p. 602.

Philippine Journal of Science, Manila

February, 1920, 16, No. 2

Philippine Turtles. E. H. Taylor.—p. 111.
Some Bees from Panay. T. D. A. Cockerell.—p. 145.
Low Sun Phenomena in Luzon. W. J. Fisher.—p. 151.
Higher Basidiomycetes from Philippines and Their Hosts, II. O. A. Reinking.—p. 167.
*Biochemical Study of Copra Meal. F. O. Santos y Alvarez.—p. 181.
Coleoptera Fauna of Philippines. W. Schultze.—p. 191.
Philippine Bees. T. D. A. Cockerell.—p. 205.

Food Value of Copra Meal.—The nitrogen partition in that portion of copra meal insoluble in hot water was studied by Alvarez and he found that copra meal is rich in the amino-acids necessary for maintenance and growth. The alkali-soluble protein is the most abundant in copra meal. Copra meal contains: oil, 12.2 per cent.; crude protein, 20.1 per cent.; carbohydrates, 37.0 per cent.

Social Hygiene, Menasha, Wis.

July, 1920, 7, No. 3

Venereal Disease Clinics. E. H. L. Corwin.—p. 337.
Social Hygienist in Modern World. A. G. Spencer.—p. 349.
Colonies for Mental Defectives. E. A. Prince.—p. 357.
Anti-vice Movement in California. F. Highborn.—p. 365.
Venereal Disease in Czecho-Slovakia. P. S. Platt.—p. 377.
Workable Plan for Quarantine. E. H. Hooker.—p. 385.
Opportunities for Sex Education in English Classes. L. B. Thompson.—p. 391.
Will in Life. J. Walsh.—p. 400.
Unadjusted Girl. C. W. Smith.—p. 401.

Southwest Journal of Med. and Surg. El Reno, Okla.

June, 1920, 28, No. 6

Renal Function and Urological Surgery. C. K. Smith, Kansas City, Mo.—p. 101.

Southwestern Medicine, El Paso, Texas

June, 1920, 4, No. 6

Obstetric Situation. A. Kirmse, Globe, Ariz.—p. 1.
Benign Tumors of Bladder and Their Treatment. K. D. Lynch, El Paso, Texas.—p. 3.
Pain Due to Non-Suppurative Intranasal Disorders. J. J. McLoone, Phoenix, Ariz.—p. 8.
Adenoma and Malignancy of Thyroid. E. B. Rogers.—p. 11.
Oral Infection and Systemic Disease. E. J. Cummins.—p. 14.

July, 1920, 4, No. 7

Lesions Found in Twelve Hundred and Fifty Roentgen-Ray Examinations of Gastro-Intestinal Tract. W. W. Watkins, Phoenix, Ariz.—p. 1.
American Youth as Mirrored by World War: Some Timely Lessons. C. E. Yount, Prescott, Ariz.—p. 13.

Tennessee State Medical Ass'n Journal, Nashville

July, 1920, 13, No. 3

Tumors of Kidney. W. D. Haggard and H. L. Douglass, Nashville.—p. 81.
Treatment of Cervical Carcinoma and Uterine Fibroma with Radio-Active Rays. E. T. Newell, Chattanooga.—p. 88.
Pyelitis in Infancy and Childhood. R. H. Perry, Nashville.—p. 93.
Efficient Professional Service. J. D. Brewer, Dyersburg.—p. 97.
Tuberculosis of Kidney. R. W. Grizzard, Nashville.—p. 100.
Focal Infection from Dental Standpoint. D. P. Houston, Chattanooga.—p. 104.
Significance of Choked Disk. A. C. Lewis, Memphis.—p. 107.

Virginia Medical Monthly, Richmond

July, 1920, 47, No. 4

*Relation of Foci of Infection to Grave Anemias. F. C. Rinker, Norfolk.—p. 147.
Atropin Treatment of Pylorospasm in Infants. C. Willcox, Norfolk.—p. 149.
Management of Renal Insufficiency. W. B. Newcomb, Norfolk.—p. 152.
Use of Radium in Gynecology. E. C. S. Taliaferro, Norfolk.—p. 153.
Artificial Pneumothorax. C. L. Harrell, Norfolk.—p. 155.
Postoperative Care of Female Bladder. E. T. Hargrave, Norfolk.—p. 158.
Prognosis and Treatment as Observed in Sixty-Seven Cases of Pneumonia. H. M. Doles, Norfolk.—p. 159.
Diagnosis of Conditions Obtaining During Normal Labor, without Vaginal Examinations. B. Lankford, Norfolk.—p. 161.
There is not only a Disease which has the Patient, but a Patient who has the Disease. W. W. Silvester, Norfolk.—p. 165.
Laryngeal Stenosis. L. P. Royster, Norfolk.—p. 167.
American College of Surgeons. S. Leigh, Norfolk.—p. 169.
Abortion; Its Causes and Treatment. P. S. L. Moncure, Norfolk.—p. 173.
*Intestinal Obstruction Due to a New Growth Incarcerated in Hernial Sac. Report of a Case. G. W. Schenck, Norfolk.—p. 174.
Cases in Ophthalmic Practice. B. R. Kennon, Norfolk.—p. 175.
Importance of Children Having Their Eyes Examined under Mydriasis, before Entering School. A. D. Morgan, Norfolk.—p. 176.

Focal Infection Cause of Anemia.—It is suggested by Rinker that focalized infections may be the underlying cause of the so-called idiopathic and primary types of anemia. After the removal of primary foci of infection, a thorough search for secondary foci should be made, and they should be removed.

Intestinal Obstruction from Tumor.—In a case of incarcerated right inguinal hernia with symptoms of strangulation, the incarcerated loop of ileum showed a tumor about the size and shape of an egg—hard and irregular—located at the lowest point of the ileum, about 15 inches from the ileocecal junction. There were several small ulcerations on both sides of the tumor, the mesentery being involved. The tumor having the appearance of a malignant growth, a wide resection was made. About 30 inches of the ileum was resected, and lateral anastomosis to the cecum was done. The pathologist's report was a fibrosis surrounding an area of central fat necrosis; scattered through the fibrous tissue were numerous large endothelial cells filled with pigment.

West Virginia Medical Journal, Huntington

July, 1920, 15, No. 1

Testing of Donors for Blood Transfusion. C. W. Waddell, Fairmont.—p. 6.
Visceroptosis from Neurologist and Psychopathist Standpoint. A. R. Mackenzie, Huntington.—p. 13.
Treatment of Visceroptosis. R. J. Wilkinson, Huntington.—p. 17.

August, 1920, 15, No. 2

Determination of Heart Disease, Diagnosis and Prognosis of Certain Forms. G. H. Barksdale, Charleston.—p. 41.
Dreaded "Second Summer" of Neglected Babies; Plea for Proper Feeding and Environment. R. A. Ashworth, Marshall County.—p. 46.
Typhoid Fever from Laboratory Standpoint. K. D. Graves, Roanoke, Va.—p. 51.

Wisconsin Medical Journal, Milwaukee

July, 1920, 19, No. 2

Treatment of Gunshot Fractures in Base Hospital. P. Rogers, Milwaukee.—p. 55.
Impressions of Medical Department of German Army. D. Bruins, Milwaukee.—p. 58.
War Injuries. T. J. Snodgrass, Janesville.—p. 62.
Reminiscences from Base Hospital 1, New York City. G. N. Brazeu, Milwaukee.—p. 65.
Hypertension and Chronic Nephritis. H. P. Greeley, Madison.—p. 68.
Etiology and Pathology of Chronic Gastric and Duodenal Ulcer. D. Hopkinson, Milwaukee.—p. 71.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Japan Medical World, Tokyo

June 12, 1920, 10, No. 24

Pathology of Puerperal Eclampsia. K. Obata.—p. 517. To be cont'd.

June 19, 1920, 10, No. 25

Pathology of Puerperal Eclampsia. K. Obata.—p. 541. To be cont'd.

Journal of Tropical Medicine and Hygiene, London

July 15, 1920, 23, No. 14

Fifteen Years' Experience with Malaria in Upper Congo. A. Pearson.—p. 177.
Colloidal Drugs in Treatment of Bilharziasis in Young People. F. G. Cawston.—p. 180.
*Quinin Prophylaxis. W. M. McDonald.—p. 182.
Use of Tourniquet in Operations for Elephantiasis of Scrotum. R. Howard.—p. 183.

Quinin Prophylaxis Against Malaria.—MacDonald is convinced that quinin prophylaxis, efficiently and promptly applied to troops entering for the first time a malarious region, would greatly reduce the incidence of malaria and should eliminate the possibility of any sick rate from benign tertian infection. To be of value, however, quinin should be administered on parade so as to avoid the probability of the dose being lost or hidden if left to the individual to take or not as he pleases. Secondly, as it is of importance that the parasites should be caught in the early stages, quinin should be administered daily, 7.5 gm. per day, in preference to large doses at intervals of several days.

Lancet, London

July 24, 1920, 2, No. 5056

*Psychology of Special Senses and Their Functional Disorders. A. F. Hurst.—p. 169.
*Nerve Symptoms in Acute Infections. T. Horder.—p. 174.
Intravenous Use of Acetyl-Aminophenyl Salt of Antimony (Stibenyl). P. Manson-Bahr.—p. 178.
Sudden Deaths on Active Service. T. H. G. Shore.—p. 180.
*Intrinsic Cancer of Larynx. St. C. Thomson.—p. 182.
Psychologic Aspect of Effort Syndrome. M. Culpin.—p. 184.
*Symbiotic Growth of B. Proteus and B. Tuberculosis. E. T. Thompson.—p. 186.
Mixed Cultures. R. A. O'Brien.—p. 187.

Psychology of Special Senses.—Cutaneous sensibility and cutaneous anesthesia are the topics taken up by Hurst in this lecture. Apart from actual hysterical symptoms, there are no underlying physical or mental symptoms or group of symptoms, which precede and accompany them and persist after their disappearance, to which the term hysteria can be applied. It is clear, therefore, that while it is easy to define hysterical paralysis and hysterical anesthesia, "hysteria" cannot exist in their absence. The only possible definition of hysteria is "the condition in which hysterical symptoms are present," hysterical symptoms being in turn defined as "symptoms which result from suggestion, and are curable by psychotherapy"; hysteria is thus a condition in which symptoms are present which have resulted from suggestion and are curable by psychotherapy. The subject is discussed fully and amplified by case reviews.

Nerve Symptoms in Acute Infections.—The mechanisms, physiologic and histologic, by which nerve symptoms in acute infections are produced are discussed by Horder. Nerve symptoms arising as part of the interaction already referred to are directly referable to one or more of three different processes by which the nervous system becomes implicated: (1) by toxemia; (2) by infection of the meninges; (3) by infection of the nerve tissues themselves. In the first of these three mechanisms the nerve symptoms manifested by the patient are chiefly "functional" in origin; in the second and in the third of these mechanisms the symptoms are chiefly "organic" in origin. The great significance of these mechanisms lies in this distinction. The mechanism of toxemia is the one operative in diphtheria and tetanus in the great majority of cases. It is also that by which nerve symptoms arise in most cases of pneumonia, typhoid fever, scarlet fever, and rheumatic fever. Secondary infection of the meninges occurs not infrequently in pneumococcus infection and is relatively more common when the primary infection occurs in the middle ear. In measles the nerve symptoms are usually toxemic, but the specific virus, though it causes meningism not infrequently, rarely causes a true meningitis. That it occasionally sets up an encephalitis or a myelitis, however, has been long recognized. In mumps an actual inflammation of the central nerve structures sometimes occurs, and recent experimental work suggests strongly that the virus in this disease has group affinities with the causative virus or poliomyelitis. It is possible that the virus of infantile cholera has similar affinities. In generalized tuberculosis the mechanism of encephalitic as well as meningitic involvement may be added to that of a toxemia. In cerebrospinal fever the meningococcus attacks the pia arachnoid in primary fashion, and this is by far the chief mechanism of production of the long series of symptoms presented in the disease. In poliomyelitis and in encephalitis, be the virus identical or only possessed of group affinity, the primary infection is in the central nervous system itself, through intimate vascular infiltration. The nerve symptoms present in influenza, though protean in nature, are probably due, in the main, to a toxemia, which may be of any degree from mild to intense; meningism is not uncommon; meningitis is rarely present.

Mobility of Cord in Cancer of Larynx.—Of forty-four cases analyzed by Thomson the affected cord was quite mobile in twenty-seven. In the remaining seventeen cases its movements were more or less impaired, the degree varying from mere sluggishness to complete fixation. In three of these latter cases the effect in movement developed while the cases were under observation. It was only possible to remove a satisfactory portion of growth before operation for microscopic examination in ten out of these forty-four cases. But it is noteworthy that in eight of these ten cases the cord moved freely. Concluding, Thomson says that impaired mobility of a cord is not a necessary or frequent symptom of intrinsic cancer of the larynx. It is, in fact, only met with in a minority of cases presenting themselves for diagnosis. It is more apt to be met with in an early case when the growth is embedded in the cord or growing into it than in a distinctly sessile or even pedunculated tumor. It is also more usual with growths situated on the inner surface or the subglottic area, than with those seated on the upper surface of the cord. Otherwise, fixation indicates an advanced case. When present it is a very valuable symptom in distinguishing a malignant from an innocent tumor. It is of little value, and may even be misleading, in diagnosing a malignant growth from a tuberculous or syphilitic deposit. As regards prognosis, it is an unfavorable symptom.

New Organism Discovered by Symbiotic Growth.—Four strains of *B. tuberculosis hominis* and one strain of *B. tuberculosis* (bovine) were grown by Thompson on large tubes of glycerin-brain agar for one month, after which time sufficient glycerin-veal broth was added to cover the growth, and inoculated with *B. proteus*. In all the mixtures a diphtheroid organism was observed at the end of ten days. Yeastlike odor is apparently characteristic of this remarkable phenomenon, as it was noticed in all the tubes. Furthermore, the dense turbidity due to the growth of *B. proteus* had disappeared on the formation of this new organism. Subcultures made on surface agar showed no growth at the end of seven days, the proteus having died out. In stab glucose agar, inoculated from the mixture, a growth was observed at the end of three days, which was strictly anaerobic. The growth was a compact one, starting about half way from the surface of the glucose agar. On microscopic examination it was found to be the diphtheroid organism observed in the mixtures. Morphologically and culturally this organism is identical with the acne bacillus. Thompson suggests that his experiments show that the acid-fast organisms and the streptothrices are closely related.

Medical Journal of Australia, Sidney

June 19, 1920, 1, No. 25

War Amputations of Lower Limb. A. V. Meehan.—p. 571.
Vincent's Disease. J. V. Duhig.—p. 575.
*Food Poisoning due to Bacillus Aertryeke. R. Dick.—p. 576.
Splinter of Wood in Anterior Chamber. J. L. Gibson.—p. 577.
Neuro-Muscular Atrophy. A. Watkins.—p. 577.

Poisoning with Bacillus Aertrycke.—In Dick's cases of acute gastro-enteritis, sausage meat was the source of the infection. No sample of the incriminated sausage was obtainable, but from the symptoms shown by these patients and the results of the serum reactions, Dick concludes that this is an example of food poisoning due to *B. aertrycke*.

South African Medical Record, Cape Town

June 26, 1920, 18, No. 12

Experiences in East African Campaign. R. D. A. Douglas.—p. 223.
Advances in Medicine Since the War. A. W. Falconer.—p. 229.

Annales de Médecine, Paris

1920, 7, No. 3

Advantage of Measuring Size of Pleural Cavity in Course of Pneumothorax. L. Bard.—p. 169.
Schick Diphtherin Reaction. J. Renault and P. P. Lévy.—p. 180.
*Phenomena with Reinjection of Serums. Péhu and P. Durand.—p. 196.
Premonitory Local Pains with Cancer Metastases. A. Cramer.—p. 226.
Present Status of Yellow Fever. J. Paraf.—p. 233.

Phenomena with Reinjection of Serums.—Péhu and Durand analyze seventy-eight cases in which the antiserum or antitoxin had been reinjected within three months, and forty-two in which the interval was longer, comparing them with others on record. Darré has applied to intraspinal serotherapy the Besredka method of a preliminary small dose, waiting from one to three hours before the main injection. They emphasize, however, that this protects only against the immediate phenomena, the nervous or cardiovascular shock. It does not protect against serotoxic eruptions and edema. These are liable to occur after any injection, first or second, and the hypersusceptibility may long persist. The serotoxic reactions are usually harmless.

In their experience, preexisting heart symptoms did not afford any predisposition to cardiovascular shock, and the serotoxic symptoms were not reenforced. The reaction to the first injection is no criterion as to what the reaction to the second will be; the route for the injection seems to be the preponderant factor, especially the intraspinal and intravenous routes. In two of their cases there was intense cardiovascular shock in less than two minutes after the second injection; in the child of 4, a preliminary intraspinal injection of 0.5 c.c. had been given, followed in half an hour with 1 c.c. The collapse was alarming, but two hours later 10 c.c. of the antiserum was injected without incident. The child died ten days later, the meningitis having flared up anew. In the other case, 2 c.c. had been injected by the vein, and the symptoms of severe collapse and shock subsided in two hours and the child recovered. Three other children of 2 and 4 died after the reinjection, given nearly five, six and nine weeks after the first. Necropsy showed nephritis in two; a large thymus (15 gm.) and small cheesy focus in the right lung in the other. Horse antitoxin had been used first, and, for the second injection, goat serum from the renal vein; possibly crossed anaphylaxis might be incriminated. In conclusion they report success with Méry's method of repeating the injection weekly, whether there are other indications for it or not, thus warding off the development of anaphylaxis. They gave the weekly reinjections subcutaneously, and no phenomena followed, but this method is applicable only when the second injection can be made during the weeks immediately following the first. If acute nervous or cardiovascular shock develops, the fluid injected into the spine can be withdrawn. Epinephrin in cardiovascular shock has often rendered valuable service.

Archives de Médecine des Enfants, Paris

July, 1920, 23, No. 7

Natality and Infant Mortality. P. Nobécourt and G. Schreiber.—p. 385. Cont'd.
*Alimentary Test in Infants. E. Terrien.—p. 404.
*Ether Treatment of Pneumonia in Children. M. Lassalle.—p. 414.
Amyotrophy in Infant from Shell Concussion. P. Haushalter and P. Kahn.—p. 423.

The Fiction of the So-Called Alimentary Test as Guide in Infant Feeding.—Terrien presents arguments that the alimentary test—the reaction to cow's milk when the amount is increased, watching whether the infant gains or loses in weight and thrives—is far from being a reliable guide to the proper food for the child. The fact that the child is unable to digest unmodified cow's milk does not prove that it cannot digest other foods.

Ether Treatment of Bronchopneumonia in Children.—Lassalle recalls that this disease is nearly always secondary to a pathologic state, measles, whooping cough, influenza, etc., and that the infection spreads in two different ways, causing the common or the suffocative variety according to whether the infection is direct or caused by embolization of the septic agent. He compares the evolution of bronchopneumonia to that of a furuncle and points out the striking analogy between these two processes, the main difference being the medium in which the infection acts. The treatment of a furuncle, after incision, being asepsis, he conceived the idea of treating bronchopneumonia with ether, to realize asepsis, and obtained wonderful results. The injected ether leaves the body through the lungs, and being a powerful disinfectant is capable of impairing the vital conditions of the microbes in the lungs. Unlike oxygen, ether enters everywhere; its action is: (1) anti-infectious, (2) anti-thermic, (3) anti-spasmodic, and (4) toni-cardiac, while it is harmless. The result depends less on the quantity than on the moment of the injection; the earlier it is made, the better. Generally, 1 c.c. every four hours will do, sometimes even only morning and night. Often one injection is enough. The treatment of bronchopneumonia should thus be first, ether, then heart tonics, and then revulsion with mustard. He reports some typical cases to show the benefits of this treatment, and states that he never witnessed any injurious by-effects in his more than 200 injections of the kind.

Bulletin de l'Académie de Médecine, Paris

June 29, 1920, 83, No. 26

*Common Origin of Varicella and Zona. A. Netter.—p. 588.
*Splenectomy in Hemolytic Jaundice. H. Hartmann.—p. 599.

Common Origin of Varicella and Certain Cases of Herpes Zoster.—Netter has compiled from the literature fifty-nine cases in which herpes zoster was followed by chicken pox in the contacts, and ten cases in which varicella was followed by cases of herpes zoster. This connection between varicella and zona was evident in three cases in his service. Several cases of one of these diseases developed after a case of the other, with scarcely a possibility for contagion from outside. The intervals were about the same as the intervals with varicella. In sixteen of the cases the two diseases ran their course in the same person almost simultaneously. The eruption which sometimes develops along the course of herpes zoster resembles closely that of varicella.

Splenectomy in Hemolytic Jaundice.—In Hartmann's case the patient and a brother had both presented hemolytic jaundice since childhood and the spleen was extremely large. On exposure of the spleen to the roentgen rays, pains developed in the region, but after splenectomy not only the pains but also the jaundice disappeared in two days. In two other cases the erythrocytes numbered only 1,200,000 and 1,870,000, but the blood picture rapidly improved after splenectomy. This group of three cases is the first to be published in France, he says, in which the outcome was a great success. In the discussion that followed, Vaquez related that he was the first to remove the spleen for hemolytic jaundice with splenomegaly (1907), but his patient died and he was severely criticized for his "reckless interference."

Bulletins de la Société Médicale des Hôpitaux, Paris

May 14, 1920, 44, No. 17

Epidemic Encephalitis. P. Marie and others.—p. 661; 668; 685; 689.
Skin-Bronchus Fistula. C. Achard and A. Leblanc.—p. 664.
*Oculopilomotor Reflex. J. A. Sicard and J. Paraf.—p. 676.
Silent Abscess in Frontal Lobe. G. Guillain and E. Libert.—p. 680.

Oculopilomotor Reflex.—Sicard and Paraf relate that slight rubbing or pinching of the intercostal region may be followed by a pilomotor reflex in the arm on that side, if goose-flesh is easily induced. This positive reflex can be arrested by compressing the eyeballs. This inhibiting reflex seems to be constant, but the pilomotor positive reflex is variable and inconstant, even in the same person. It shows that compression of the eyeballs may have multiple and varied effects

not only on the pneumogastric, slowing the heart rhythm—the oculocardiac reflex—but also on the sympathetic, inhibiting the pilomotor reflex. There are also the oculopolyuric reflex, the oculoglycosuric reflex, and the oculo-albuminuric reflex. These reflexes generally occur dissociated in different subjects, and they must not be taken too seriously in differential diagnosis.

Journal de Médecine de Bordeaux

April 25, 1920, 91, No. 8

Monstrosities of the Brain. G. Jeanneney.—p. 195. Conc'n.
Medicolegal Cases of Infanticide. P. Lande.—p. 200.
Sarcoma of Small Intestine. Recurrence Three Months After Double Resection. A. Charrier.—p. 202.
Congenital Displacement of Kidney. Jeanneney and Blanchot.—p. 204.

May 10, 1920, 91, No. 9

Immobility of the Thorax with Emphysema. Creyx.—p. 227.
*Continuous Aspiration in Surgery. L. Rocher.—p. 235.
Spa Treatment and Otorhinolaryngology. Got.—p. 237.

Continuous Aspiration in Surgery.—Rocher expatiates on the advantage of keeping up aspiration at all operations, but especially with abdominal and throat surgery. If the assistant manages the suction tube skillfully, the whole operation proceeds clean and fast; there is less danger of hemorrhage as there is no need to wipe off bleeding surfaces and thus open the bleeding mouths of the vessels. The operation is shortened by a half, and with it the danger of hemorrhage. When pus escapes into the peritoneum or elsewhere, the continuous aspiration sweeps it away in many cases otherwise doomed. The assistant watches for any escaping pus and sucks it up at once as the first drops appear. Two cases of gangrenous appendicitis are described to show the advantages of this technic, which he has been applying for years, dispensing with sponges and warding off vomiting.

Journal de Radiologie et d'Electrologie, Paris

February, 1920, 4, No. 2

Facial Paralysis and Radiotherapy. Delherm and Laquerrière.—p. 49.
Radiography of Head of Femur to Aid in Operating. P. Japiot.—p. 65.
Radiography of Shoulder. Chassard.—p. 68.
Dorsal Luxation of Wrist. F. Arcelin.—p. 71.
Luxation of Semilunar Bone in Wrist. R. Desplats and P. Buffe.—p. 73.
Radiography of Subphrenic Gas Abscesses. I. Solomon.—p. 74.
Radioscopy of Pulsion Diverticulum. Lagarenne and Guilleminot.—p. 76.

Paris Médical

June 12, 1920, 10, No. 24

Radiology of the Kidneys. Ribadeau-Dumas and others.—p. 481.
Splenopneumonia and Interlobar Pleurisy. P. Ardin-Delteil and Raynaud.—p. 487.

June 19, 1920, 10, No. 25

Microbian "Carapace" Dermo-Epidermitis. H. Gougerot.—p. 497.
Lethargic Encephalitis. G. Laroche and Filassier.—p. 501.
*Valsalva's Experiment in Semeiology of the Heart. Maudru.—p. 504.
Congestion of the Apex in Typhus. Dumitresco-Manté.—p. 505.
Apneic Origin of Emotional Jaundice. L. Plantier.—p. 506.

Valsalva's Experiment in the Semeiology of the Heart.—Maudru says that forced expiration, after a deep inspiration, the mouth, nose and glottis being tightly shut, deserves attention as a means to distinguish an organic from an inorganic heart murmur. The effort experiment allows a better exploration in this sense that, by holding the lung still and slowing the pulsations of the heart, it becomes easier to recognize whether the murmur is organic or inorganic; and by the more intimate contact of the pericardium layers, a hitherto unsuspected or more characteristic friction sound may be heard.

Presse Médicale, Paris

July 3, 1920, 28, No. 45

*Diagnosis in Psychiatry. M. Laignel-Lavastine.—p. 441.
*Incision of the Cervix to Promote Delivery. A. Schwaab.—p. 443.
Mineral Waters and Anaphylaxis. J. Galup.—p. 445.

The Diagnosis in Psychiatry.—Laignel-Lavastine comments on what he calls the picturesque phase of mental disease, that is, the phase in which the painter portraying the attitude, the costume and the reactions to the environment shows at a glance the nature of the mental disturbance. The picturesque, the psychiatric and the biologic diagnosis have to be considered in turn and in the proper perspective, and he relates four typical cases to demonstrate how this should be done, "proceeding from the picturesque reaction to the syndrome, the affection, and the malady." One of his examples is that of an unmarried woman interned at the request of her physician, the object of her erotic persecution. The perspective diagnosis was erotomania in a hypomaniac from hyperthyroidism resulting from acute articular rheumatism at the age of 24. As a rule, however, psychiatry, as well as internal medicine, rests on the tripod: alcoholism, tuberculosis and syphilis.

Incision of the Cervix to Promote Delivery.—Schwaab recommends lateral rather than median incisions, and states that the only one of his seven patients treated in this way who had developed fever was already febrile when the cervix was incised. He declares that this method for rapid dilatation of the cervix is no more dangerous than other emergency procedures for the purpose, and has a well defined place in obstetrics.

July 7, 1920, 28, No. 46

Ear and Throat Complications of Typhus. A. Costinis.—p. 453.
*Mental Disturbances in Syphilities. A. Barbé.—p. 454.

Mental Disturbances in Syphilis.—Barbé reviews extensive literature on this subject, and reiterates that there is no special type of psychoses peculiar to syphilis. It has only recently been recognized that syphilis, like any infectious disease, can induce mental disturbances, besides those of general paresis. The true toxic-infectious syphilopsychoses are those of the secondary period, traceable to the meninges. They usually appear about the fortieth day after the primary lesion, and the onset is sudden, like a toxic delirium. Loehe has reported a case of jacksonian epilepsy, coma and death, three months after infection, and hemiparesis has been observed, and one case of hemiplegia is on record, but there is nothing characteristic about the mental confusion or toxic psychosis of this phase except the improvement under specific treatment.

July 10, 1920, 28, No. 47

*Grave Anemia with Uremia. C. Aubertin and J. Yacoel.—p. 461.
*Vertigo. M. Vernet.—p. 462.
Glioma of Nasal Fossae. Anglade and Philip.—p. 464.

Severe Anemia with Chronic Nephritis.—Aubertin and Yacoel relate that the anemia was so grave in some of their eleven cases of nephritis with uremia that it masked the causal kidney disease, as also in one of six cases without uremia. There was a tendency to edema in only four of the total seventeen, but the polynucleosis averaged 80 per cent. although the leukocyte count was generally normal and there were no secondary infections to explain it. The marrow seemed to be incapable of replacing the destroyed corpuscles, and hence the evolution of this grave anemia was rapid. In two cases described in detail, the girl of 21 and man of 27 died in six and eight months after the first symptoms. The anemia seems to be usually the work of the uremia and fluctuates with this.

Epinephrin in Treatment of Vertigo.—Vernet remarks that hitherto little has been done to combat the primal cause of vertigo which he defines as a loss of vasotonic balance in the internal ear from disturbance in the sympathetic nervous system. We have in epinephrin, he says, a means to restore the balance as it stimulates the nerve terminals, regulates the blood pressure and has an antitoxic action. In the last four years he has thus treated large numbers of patients, giving from 5 to 20 drops of the 1:1,000 solution of epinephrin twice a day, suspending it for a time after ten days, then resuming. Old and advanced lesions of the cochlea were not benefited; in some cases drugs to act on the vagotonia were found useful adjuvants. He regards this endocrine treatment as more promising than any other yet known.

July 14, 1920, 28, No. 48

"Bone Transplantation," not "Grafts." R. Leriche and A. Policard.—p. 473.
*Inorganic Motor Disturbances. M. Briand and A. Rouquier.—p. 473.
Pains Like Electric Shock Consecutive to Trauma of Back of Neck. R. Dubois and J. Ribeton.—p. 474.
*Nature and Treatment of Diabetes. F. Farges.—p. 475.

Inorganic Motor Disturbances.—Briand and Rouquier state that they have encountered recently a number of cases of

motor disturbances which would most certainly have been classed as hysteria if it were not for the prevailing epidemic encephalitis. Evidently they belong in this latter group, and they sustain the assumption of some infectious element as a factor in the so-called inorganic motor disturbances.

Diabetes.—Farges recalls that the sugar in the blood is derived from the glycogen in the liver and not directly from the food, and that levulose and lactose do not induce glycosuria or hyperglycemia in diabetics. Even when glucose or saccharose is taken with the lactose, no further reducing power is conferred on the diabetic urine. His course of treatment is with restriction to 2 liters of milk to which he adds 200 mg., more or less, of lactose. In one of his twenty cases the man had 20 gm. sugar per liter, with 2,100 c.c. of urine, when first examined. His diet was not changed except that he took 20 gm. of lactose daily for a week. The glycosuria was then 7.85 per liter; then the diet was restricted to 2 liters of milk and 100 gm. of lactose, and in four days the urine was free from sugar. Then eggs, veal, chicken and green vegetables were allowed in addition, and during the several months to date his health has been perfect, with no trace of glycosuria. One woman of 61 with 37.76 per sugar per liter and 2,400 c.c. urine was put on the milk and 125 gm. of lactose, and in three days the urine was free from sugar. In another group of cases the glycosuria showed marked reduction under the lactose, from 85.5 gm. in the twenty-four hours, to 3.15 gm. for example, after a week of the milk and lactose, but when this threshold of sugar excretion was reached it was impossible to drive it any lower down. This individual threshold keeps invariable, and it is exclusively for glucose. The higher the threshold in the urine, the higher the glucose content in the blood. With a threshold of 50 gm., the prognosis is favorable under dietetic restrictions, but above 200 gm. death is imminent within a few months. The threshold seems to be determined by the liver, he says; it produces more sugar, the graver the disease. Diabetes, therefore, is the result of a perversion of a physiologic function, the sugar excretion of the liver. Experimental research, he adds, has confirmed this.

Progrès Médical, Paris

June 5, 1920, **35**, No. 23

Classification of Epidemic Encephalitis. H. Roger.—p. 247.
Mineral Waters in High Blood Pressure. A. Pistot.—p. 249.
Lactic Acid and Lactic Ferments. G. Faroy.—p. 253.
*Sex of Skeleton Shown by Atlas. M. Baudouin.—p. 255.

June 12, 1920, **35**, No. 24

Classification of Digestive Disturbances in Infants. A. B. Marfan.—p. 259.
Mineral Waters in Chronic Rheumatism. L. Bertier.—p. 262.

Diagnosis of Sex of Skeleton by Shape of the Atlas.—Baudouin has found that the glenoid fossa is longer and wider in men than in women, and says that this "glenoid index" will determine the sex of a skeleton. He gives the findings in twenty-two skeletons from the Vaudancourt prehistoric burying place.

Schweizerische medizinische Wochenschrift, Basel

July 1, 1920, **50**, No. 27

*Tuberculin Treatment. H. Sahli.—p. 557.
*Chemistry of Thyroid Secretion. E. Herzfeld and R. Klinger.—p. 567.
*Significance of Slight Rise of Temperature in the Tuberculous. H. J. A. van Voornveld.—p. 567. Begun in No. 26, p. 539.

Intradermal Tuberculin Treatment.—Sahli inaugurated the multiple inoculation of tuberculin with his *Nadelschnepper*, and states that this is proving in many hands a convenient and effectual method for tuberculin treatment. The large number of pricks multiplies the areas for absorption, while patients do not shrink as much from it as from a subcutaneous injection. But he now prefers intradermal injection of the tuberculin as an improvement over all other methods. This allows greater precision in the dose, and the local reaction to the tuberculin generates local production of antibodies, which aid in immunizing. It has further the advantage that the local reaction is an index of the degree of immunization that has been realized and a guide to the dose of tuberculin to use to avoid injurious effects, as the skin seems to be far more sensitive to tuberculin than all other tissues. He emphasizes that intradermal tuberculin treatment and prophylaxis belong to the general practitioner, as he sees the cases in the earlier stages when tuberculin treatment offers the greatest chances for success.

Chemistry of the Thyroid Secretion.—Herzfeld and Klinger report the results of experiments on tadpoles which apparently demonstrated that thyroid extract from which all traces of iodin had been removed displayed the same biologic action as if the iodin had not been extracted. They regard this as testifying that the iodin content of the thyroid secretion has nothing to do with its biologic action.

Significance of Slight Fever in the Tuberculous.—Voornveld warns that when the rectal temperature shows a rise to 37.7 or up to 38 C. (100.4 F.) after an hour's walk, this suggests suspicion that something is wrong but it by no means testifies to tuberculosis, not even when the temperature goes still higher than this. Individual habits must also be considered; a letter carrier would react differently from an office clerk. Half an hour of repose after the test exercise should bring the temperature down to within three tenths of a degree Centigrade of what it was before the walk. [Three tenths of a degree Centigrade is nearly six tenths of a degree Fahrenheit.] If the temperature takes longer than this to decline, it is strongly suspicious of serious pathologic conditions, and tuberculosis is usually responsible. On the other hand, the lack of a temperature reaction is not an infallible sign that conditions are normal.

When the thermal reaction to exercise is approximately normal in the tuberculous, this testifies that the focus is more or less healed and isolated. Abnormal fluctuations in the temperature during repose, even if the rise is very slight, demand strict enforcement of repose. This point is the one most often neglected; either the rise is overlooked or is regarded as too slight to be heeded. He says that he has seen hundreds of patients die from the progress of their disease because the slight rises in temperature during the early, curable stage had not been heeded. Physicians must realize that it is just as wrong to allow patients with even a slight rise in temperature to go for a walk or to work as for a surgeon or obstetrician to neglect asepsis. He records the temperature every two hours at first to ascertain the individual type, also the monthly type in women. The temperature is taken several times a day in the febrile and from once to three times in the afebrile, then gradually only once in two, three or seven days, interposing an occasional day in which the temperature is taken oftener. These conclusions are drawn from Voornveld's own observation and experience, but are sustained by literature which he cites.

Policlinico, Rome

May 24-31, 1920, **27**, No. 21-22

*Medical Treatment of Dysenteric Abscess of Liver. T. Pontano.—p. 571. Conc'n in No. 24, p. 607.
*Fatal Sero-Anaphylaxis. A. Pozzo.—p. 585.

Medical Treatment of Liver Abscess.—Summarized recently, page 438.

Fatal Sero-Anaphylaxis.—Pozzo reports from Venice the necropsy findings in the case of a woman of 34 given repeated injections of commercial antistaphylococcus serum in treatment of acute articular rheumatism. He ascribes to anaphylactic toxic action the fresh thrombophlebitis in the common iliac, the fatty degeneration in liver and kidneys, and the cyanosis of the limbs with symmetrical gangrene of the palms.

June 28, 1920, **27**, No. 26

Addison's Disease in Malaria. A. Furno.—p. 668.
*Endocrine Factors in Gastric Ulcer. T. Silvestri.—p. 673.

Endocrine Origin of Gastric and Duodenal Ulcer.—Silvestri compares the results of his own experimental research with suprarenalectomy and that of others in this line, pointing out that the results differed in respect to consecutive development of ulcer according to whether the animal was gravid or not. The tendency to ulcer production is sustained by vagotonia, but castration and pregnancy neutralize vagotonia and hence arrest the tendency.

Semana Médica, Buenos Aires

March 11, 1920, 27, No. 11

*Inflammatory Endotheliomas. A. Gutiérrez.—p. 353.
*Spontaneous Abortion of Diseases. C. Citrino.—p. 357.
*Functional Diagnosis of the Liver. Tiburcio Padilla.—p. 363.
History of Care of Insane at Buenos Aires. J. Ingenieros.—p. 376.

Endotheliomas.—In Gutiérrez's case the previously healthy woman of 33 developed a progressive subacute subcutaneous dermatitis—inflammatory lymphangi-endotheliomas with neoplastic elements. Some of the bunches were excised but more and more kept coming. Treatment with radium caused the subsidence of some of the bunches, but the region ulcerated. Nine photomicrograms are given.

Aborting of Diseases.—Citrino recalls that any and every disease may get a foothold and then die out before it has had time to develop the characteristic clinical picture. This is the explanation of many puzzling transient morbid conditions, and it also explains the development of disease in the apparently healthy when the vitality becomes depressed from any cause. This was shown by the development of malaria in France in native troops from malarial zones who had not had malaria at home. It was disconcerting to observe that malaria could be acquired in France, but it soon proved that the men had been healthy carriers. The stress of army life had broken down their resistance.

Tests of Liver Functioning.—Tiburcio Padilla gives the technic for the various functional tests in vogue, but comments that none of them can be relied on implicitly, as kidney functioning may modify the findings in blood and urine. Bile itself has comparatively little importance as it is merely a residual product, like coke in a gas plant. The conclusions as to liver functioning have to be based on the oversight of the whole, the persistency, and the intensity of the responses to the tests. The only liver test which throws light on the prognosis is the camphor test, although even this is not infallible. He has obtained negative results with this test in transient jaundice or other conditions in which there could be no question of an irreparable loss of the liver function.

March 18, 1920, 27, No. 12

*Menacing False Croup. F. Cardey.—p. 389.
Gonorrhea; Diagnosis and Pathology. E. Castaño.—p. 392.
Etiology of Measles. J. A. López.—p. 396.
*Pepsinogenesis and Lymphocytosis. A. J. Pavlosky.—p. 398.
Pathologic Suicide. R. Bosch, Jr.—p. 405.

False Croup.—Cardey explains that grave false croup is an inflammation of the larynx and trachea in children with the exudative diathesis. Intubation is of little use, the excessive secretion blocking the lumen of the tube and preventing its getting a hold so that it is promptly expelled, and it is impossible to keep replacing it through the whole course of the tracheitis which may last three weeks or more. In several of his cases, the difficulty in breathing was just as pronounced the twentieth day after tracheotomy as at first, whenever he attempted to remove the tube. Diphtheria antitoxin is absolutely useless, and usually aggravates the condition. He ascribes the croup in great part to the improper food the children are getting, which aggravates the tendency to the exudative diathesis. The children were all between 1 and 4 years old, the age at which improper diet causes the greatest disturbances. The practical conclusion from his experience is that children with this diathesis should have their diet regulated with exceptional care to ward off this false croup. If it develops and resists ordinary measures, tracheotomy should be done without delay. The air should be kept moist with steam, and moist heat should be applied to neck and chest; and the food be mainly cereal and vegetable gruels and soups, with fruit juices.

Origin of Pepsin.—Pavlovsky reports research which has apparently demonstrated the important share of the spleen in the formation of the gastric ferments, and that injections of spleen extract increase the quantity and improve the quality of the secretion in the stomach. Injections of fresh leukocytes and red corpuscles from the horse acted in the same way. All confirm the rôle of the spleen in normal digestion as well as in blood production, and sustain the principle that the secretion of an organ is perhaps the best stimulant to promote its secretory function. He gives the details of series of tests on dogs with a Pawlow gastric pouch, given an intramuscular injection of 25 c.c. of a 25 per cent. decoction of spleen tissue, the blood count recorded over long periods, and the units of gastric digestion.

Deutsche medizinische Wochenschrift, Berlin

June 3, 1920, 46, No. 23

Exotic Diseases and Diagnostic Errors. I. P. Mühlens.—p. 617.
Case of Cystic Colitis. E. Keeser.—p. 619.
Effect of Nutrient Medium on Weil-Felix Reaction. Michaelis.—p. 619.
Case of Atypical Muscular Dystrophy. A. Böttner.—p. 620.
*Conservative Treatment of Bone Cysts. F. Lotsch.—p. 620.
Arc-Lamp Phototherapy in Laryngeal Tuberculosis. Blegvad.—p. 621.
More about Spirochaeta Trimerodonta. E. Hoffmann.—p. 625.
Aromatic Nitro Compounds as Abortifacients. J. R. Spinner.—p. 626.
Acute and Chronic Vagotonia. L. Feilchenfeld.—p. 627.
*Support of Perineum in Labor. Pfeiderer.—p. 629.
Dilated Pupil Following Barbital Poisoning. J. Fleischer.—p. 630.
Intravital Microscopy of Eye with Gullstrand-Nernst Lamp. Koeppe.—p. 630.
Rhinolaryngologic Hints for General Practitioner. Finder.—p. 633.

Healing of Solitary Bone Cyst.—Lotsch reiterates that the bone should never be resected for a single focus of fibrous osteitis, and reports a case in a girl of 10 in which roentgenograms taken every ten days showed bone tissue gradually filling up the cavity of the solitary cyst, after curetting. By the eleventh month not a trace of the cavity could be detected.

Support of Perineum in Labor.—Pfeiderer discusses his method of supporting the perineum to prevent laceration. He commonly avoids antepartum irrigation of the vagina. He avoids also, in most cases, putting his hand or even a finger into the vagina. In case external palpation does not inform as to the presenting part, he palpates through the rectum. Through the rectal wall he can distinguish the outlines of the head, rump, foot, hand or umbilical cord. Only very rarely does it become necessary to enter the vagina. When the head begins to distend the vulva markedly, he places the patient on the right side, requesting her to draw up the legs as much as possible. He takes a position in front of the patient and lays his right hand on the head of the child in such a manner that the tips of the fingers of the outspread hand rest on the perineal border. Then, as the head of the child advances, he pushes the perineal margin ahead of his finger tips and over the head of the child, so that the distance from the anal opening to the edge of the perineum is not much greater than it was before the head began to protrude through the vulva. Especial caution is required when the edge of the perineum reaches the chin of the child. Here he checks a too rapid advance of the head. By this method the number of perineal tears has been much reduced. Even primiparae of advanced age are frequently brought through childbirth without injury to the perineum.

Jahrbuch für Kinderheilkunde, Berlin

1920, 91, No. 6

*Anaphylactoid Purpura. E. Glanzmann.—p. 391.
*Calcium Content of Blood. Ida Handovsky.—p. 432.
*Vascular Thrombosis in Young Children. R. Hamburger.—p. 439.

Anaphylactoid Purpura.—Glanzmann explains that the etiology of a pathologic predisposition to bleed is extremely complex. In the purpura hemorrhagica group the composition of the blood itself is the main factor; in the anaphylactoid group, chemical (toxic) influences acting on the capillaries are responsible, inducing stasis, orthostatic purpura, and angioneurotoxic bleeding. In a third group, mechanical-dynamic factors are mainly involved; this includes the hemorrhagic phenomena in whooping cough, and with thrombosis, etc. The anaphylactoid hemorrhages, on the other hand, have no connection with high blood pressure or local inflammatory processes. This classification points the way to treatment, arsenic and transfusion of blood in the hemorrhagic purpura type, and serotherapy in the anaphylactoid type.

Calcium Content of the Blood in Connection with the Face Phenomenon.—Handovsky reports that in twelve adults exhibiting the Chvostek sign and in nine free from it the calcium content of the blood was within the same range in all. This conflicts with Stheeman's statement that the calcium content is low when this sign is positive.

Thrombosis in Children.—Hamburger analyzes twenty-six cases in young children of sinus thrombosis and three of thrombosis elsewhere. The youngest child was 11 days old, and none were older than 4 months. The somnolency and cerebral vomiting were not characteristic, but in a few cases there was stasis in the peripheral veins, with edema in face and head. Symptomatic convulsions, encephalitis, etc., reveal the bacterial infection of the brain, the cerebral localization of a general infection in which the sinus thrombosis develops so insidiously as to be usually a necropsy surprise.

Monatsschrift für Geb. und Gynäkologie, Berlin

April, 1920, **51**, No. 4

*Signs of Abnormal Ovarian Functioning. R. Schröder.—p. 217.
*Indications for Interrupting a Pregnancy. R. T. von Jaschke.—p. 232.
*Status Hypoplasticus. E. Mathias.—p. 249.
Carcinoma of Vagina with Genital Prolapse. E. Kleeman.—p. 252.
Mental Condition of Parturients. F. Poensgen.—p. 256. Conc'n.

Clinical Signs of Abnormal Functioning of the Ovaries.—Schröder says that constitutional factors may be responsible for excessive functioning of the ovaries, or the loss of inhibitory factors from other endocrine glands. Chronic metro-endometritis may develop as the consequence of long continued ovarian hyperfunctioning, but transient hyperfunction is usually a period of increased physical, mental and sexual vigor. Secondary insufficiency of the ovaries may be traced to pelvic disease; to excessive or deficient functioning of the thyroid, suprarenals or pituitary; to cachexia of any kind; or acute and chronic intoxication of medicinal or parenteral nature from metabolic or nutritional disturbance; to anemias or chlorosis; to carbon dioxid intoxication from defective circulation; to nervous or mental derangement, possibly from abnormal distribution of the blood; or to unknown causes, as from change of climate. If all these can be excluded, primary insufficiency of the ovaries may be assumed, and proper treatment instituted. Perverted ovarian functioning is manifested in irregular bleeding from the uterus from the persistence of ripe follicles without any corpus luteum stage. With cystic degeneration of the ovaries, the follicles do not ripen, but with this hemorrhagic metropathy the persistence of the follicles keeps the endometrium in a constant state of proliferation. Another anomaly for which perverted ovarian secretion is known to be responsible is the persisting corpus luteum. It may be so large as to simulate extra-uterine pregnancy.

Justified Indications for Interrupting a Pregnancy.—Von Jaschke reviews the whole field of pathologic conditions in which the continuance of the pregnancy seems fraught with special dangers, his conclusion being that such conditions are few and infrequent. In 385 cases in which others advised intervention he was able to escape it in 278. Only when cough, night sweats, evening fever and progressive loss of weight continue in spite of sanatorium treatment, does he regard abortion as indicated. After the first three months, he intervenes only if the lung process is mild or only recently flaring up; otherwise we cannot hope to influence the disease with any measures. If the woman has several living children, or if there is laryngeal tuberculosis, or this is the first pregnancy in far advanced tuberculosis, he interrupts the pregnancy and sterilizes the woman. With acute heart disease during a pregnancy he advises to empty the uterus by anterior colpohysterotomy under lumbar anesthesia after the acute manifestations have subsided. With chronic heart or valvular disease, even symptoms of failing compensation do not justify it unless the heart was manifestly insufficient before the pregnancy. In these cases and with albuminuric retinitis the woman should be under constant supervision in an institution while the question of intervention is being considered. He has encountered only four cases in which uncontrollable vomiting compelled interruption of the pregnancy.

Status Hypoplasticus.—Mathias insists that this condition explains many otherwise mysterious instances of death from fright, sports, and under anesthetics. One man of 20 died after three months of increasing weakness and subnormal temperature; blood pressure 60 or 70 mm. Necropsy disclosed an extremely narrow aorta. In a case reported in detail the woman of 23 died suddenly after spontaneous delivery, and necropsy showed marked hypoplasia of the blood vessels and suprarenals, lymphatism and embryonal shape of the kidneys—thus a biologically substandard organism unable to stand the stress of childbirth plus a little chloroform.

Münchener medizinische Wochenschrift, Munich

Jan. 30, 1920, **67**, No. 5

*Roentgen-Ray Treatment of Cancer. W. Lobenhoffer.—p. 119.
Serotherapy in Tuberculosis. A. Strubell.—p. 120.
*Experience with Silver Arsphenamin. E. Galewsky.—p. 124.
Pulmonary Tuberculosis During the War. F. Reiche.—p. 127.
*Lymphogranulomatosis. R. Bierich.—p. 128.
Lethargic Encephalitis. F. Groebbels.—p. 131.
Roentgen-Ray Outline of the Lungs. H. Assmann.—p. 134; Reply. H. Chaoul.—p. 134.
Urology and the General Practitioner. E. Kraft.—p. 135.

Feb. 13, 1920, **67**, No. 7

Increase of Mental Disease in Spring and Summer. Wilmanns.—p. 175.
Changes of the Hilum Shadows in Heart Disease. H. Assmann.—p. 177.
Roentgen Irradiation in Rectal Carcinoma. H. Chaoul.—p. 179.
Irradiation of Cancers of Buccal Cavity. H. Tichy.—p. 181.
Roentgen Radiometer. Glocker and Reusch.—p. 181.
Malaria in Bavaria. F. Eckstein.—p. 183.
Mumps in Soldiers. Bardaschzi and Barabaš.—p. 185.
Ethyl Chlorid Narcosis. Voll.—p. 185.
"Utilization of Surplus Human Milk." Grumme.—p. 186.
"Urology for the General Practitioner." Schlagintweit.—p. 186.

Roentgen-Ray Treatment of Cancer.—Lobenhoffer advocates postoperative irradiation of cancer, but states that no detail of operative technic should be neglected with the idea that irradiation can be relied on to make up the deficiency, as such is not the case—it cannot always be relied on. In inoperable carcinomas, raying is a good adjuvant in the care of the patients, as it may lessen their suffering and prolong their lives. More than that we cannot expect at present. Roentgen-ray treatment cannot as yet be considered specific for cancer, and its application is neither so simple nor so harmless that it can be carried out without careful study of the indications and critical consideration of all the factors concerned. He does not think that roentgenotherapy in cancer is sufficiently developed to be used by the general practitioner.

Two Years' Experience with Silver Arsphenamin.—Galewsky has used silver arsphenamin for more than two years and in that time he has given 2,000 injections. He considers silver arsphenamin sodium as the most efficacious of all arsphenamin remedies that have appeared so far. With no other arsphenamin preparation has he had so few side reactions, but the dosage must be carefully regulated, being gradually increased and also adapted to accord with idiosyncrasies. He begins with a small dose, 0.05 gm. in the case of weakly women, otherwise 0.1 gm., and increases the dose every four or five days until he reaches the maximal dose, 0.3 gm. for men and 0.25 gm. for women, although ordinarily he does not give men more than 0.25 gm. and women more than 0.2 gm. as the maximal dose. If these heavy doses are not well borne by the patients—if they are sensitive to arsphenamin—he gives smaller doses more frequently and increases the dosage very gradually. He always waits for any untoward effects such as headache, nausea, dizziness, vomiting, weakness, etc., to subside before giving a new injection.

Anaphylaxis in Lymphogranulomatosis.—Bierich discusses the pathogenesis and the differential diagnosis of lymphogranuloma. The portal of entry has not as yet been demonstrated. The essential biologic characteristics of the lymphogranuloma are that a granulation tissue presents at one and the same time different stages of specific inflammation, while a tendency to retrogressive metamorphosis is noticeable. Characteristic albumin decomposition products are present. In uncomplicated cases (from 30 to 50 per cent.), when this stage is reached, local and general anaphylactic symptoms appear. At a later stage, either with or after development of the retrogressive phenomena, connective tissue proliferation, frequently with hyaline degeneration, takes place, which leads finally to the induration of the granulation tissue. The latter is not usually confined to the lymphadenoid tissue that was first attacked. In the microscopic preparation it can be

seen breaking through the physiologic borders and sending its proliferative infiltrate into the neighboring regions. In the manner of its local extension the lymphogranuloma closely resembles lymphosarcoma. For the differential diagnosis the clinical symptoms must often be taken into account. The proof has not yet been presented, however, of the hypothetic specific anaphylaxis-producing albumin catabolites in this disease.

Therapeutische Halbmonatshefte, Berlin

March 1, 1920, **34**, No. 5

Modern Treatment of Mental Diseases. R. Raecke.—p. 129. Conc'n. Treatment of Flat-Foot. Wollenberg.—p. 134.
*Vaccine Therapy in Furunculosis of Infants. H. Langer.—p. 138.
Subcutaneous Injections of Quinin. M. Klotz.—p. 141.
*Neo-Arsphenamin Taken Mistakenly Internally. M. Friedmann.—p. 142.

Vaccine Therapy in Furunculosis of Infants.—Langer recommends vaccine therapy in the treatment of furunculosis in infants. The injections are given daily, from 500 to 1,000 million bacteria being employed. He finds that the danger from secondary infection is less with intramuscular than with subcutaneous injections. Two or three injections will usually bring about remarkable results. It has been shown that the new-born infant lacks the power of forming specific antibodies. Langer, therefore, does not explain the favorable effect of vaccine therapy in infants on the basis of the formation of specific antibodies, but is rather inclined to bring it under the head of nonspecific protein therapy. Older children, who have developed more or less fully the power of forming antibodies, require for this reason different treatment. He uses a commercial vaccine.

Neo-Arsphenamin Taken Mistakenly Internally.—Friedmann reports a case in which the patient through a misunderstanding took internally 1.8 gm. of neo-arsphenamin. She found the powder almost tasteless, but difficult to take on account of the extremely strong odor. She had taken every evening for six consecutive days 0.3 gm. of neo-arsphenamin in a glass of water. For ten minutes after the ingestion of the powder she had suffered from slight abdominal pain. Three days after taking the first internal dose, diarrhea set in, but at the end of the six days the stools were again normal. The patient showed no objective pathologic symptoms; the urine was free from albumin and sugar; the Abelin and the Marsh tests were negative. The Wassermann reaction was still positive three days after the last of the six internal doses. One peculiar feature was that the patient through the internal doses of neo-arsphenamin got entirely rid of the oxyurids, with which she had been troubled for some time.

Wiener klinische Wochenschrift, Vienna

Feb. 5, 1920, **33**, No. 6

Vertigo and Its Diagnostic Interpretation. S. Erben.—p. 119. Conc'n in No. 7, p. 149.
Mediastinal Emphysema. S. Wassermann.—p. 122.
*Infections Following Manicuring. H. Körbl.—p. 127.
Typhus Fever. E. Schweinburg.—p. 129.
*Syphilitic Tracheo-Esophageal Fistula. M. Krassnigg.—p. 130.

June 3, 1920, **33**, No. 23

Operative Treatment of Chronic Stenosis of Larynx and Trachea. O. Hofer.—p. 485. Cont'd.
Tuberculosis Infection. Peyrer.—p. 488.
Treatment of Meningitis with Staphylococcus Vaccines; Two Cases; One Fatal. L. Schönbauer and H. Brunner.—p. 491.
Complement Fixation Test in Spanish Influenza. Engel.—p. 493.
Hints on Roentgen-Ray Diagnosis. A. Henszelman.—p. 494.

Infections Following Manicuring.—Körbl reports thirty-two cases of infection of the fingers following manicuring. In most of them the infection had led to severe inflammatory processes that required long treatment and caused more or less severe functional disturbances. In several instances the infection even threatened the life of the patients. The primary clinical picture was that of cutaneous panaritium. In most of the cases the patients did not come for treatment until the primary stage had passed. Bacteriologic examination revealed in most cases mixed infection, streptococci, however, predominating. Of the thirty-three patients only nine had manicured themselves. In twenty-four cases the patients had secured the services of professional manicurists. It seemed evident that the infection had been transmitted by instruments or ointments that had become infected. In view of the foregoing facts, Körbl suggests that manicurists should be required by law to disinfect their instruments and, by using an instrument, to avoid contamination of ointments, etc.

Tracheo-Esophageal Fistula of Syphilitic Origin.—Owing to its comparative rarity, Krassnigg reports a fatal case of formation of a tracheo-esophageal fistula in a syphilitic. He states that the vast majority of tracheo-esophageal fistulas are of carcinomatous origin, though a small portion are caused by ulceration from a foreign body in the esophagus. A small number are tuberculous and congenital fistulas. In Krassnigg's case the direct cause of death was bilateral inhalation pneumonia, which had induced incipient gangrene of large portions of the right lung. Artificial feeding through a stomach tube is strictly indicated in such cases, and the patient must be cautioned against laying aside the stomach tube even for once. As for specific antisyphilitic treatment, this may increase the size of the fistula instead of diminishing it. Surgery does not promise much when the site of the fistula is so low down as was here the case. The interposition of thyroid tissue has not gone beyond the stage of animal experimentation.

Zentralblatt für Gewerbehygiene, etc., Berlin

July, 1920, **8**, No. 7. Only medical articles listed.

*Toxicity of Anilin Dyes. Bachfeld.—p. 113. Cont'd.
*Toxic Action of Arseniuretted Hydrogen. F. Koelsch.—p. 121.

Toxicity of the Anilin Dyes.—Bachfeld's experience as physician to the large dye factory at Offenbach has not confirmed Weil's assertion in 1912 that 70.9 per cent. of the 107 dyes he investigated are toxic to handle. In six years, with an annual total of from 640 to 1,008 full time workers (300 days) only 32 developed skin disease, with a loss of 595 working days in all. Of this group of 32, in only 7 was the skin disease traceable to handling the finished dye, and in only 2 was this beyond question. In these two instances the dye was black *schwefelfarbe* or *echtmarineblau*. In handling the crude and the intermediate materials, 2 or 3 per cent. of the full-time workers were affected, and of those engaged in direct production of the dyes, 3 or 4 per cent. The article is to be continued.

Industrial Poisoning with Arseniuretted Hydrogen.—Koelsch adds eleven new cases to the 119 already on record in which AsH_3 generated in the course of the work caused severe destruction of the blood, with a mortality of 27.7 per cent. The cases occurred in chemical laboratories, metal works, balloons, and in making toy balloons; in Koelsch's cases, during the manufacture of vanadium iron from ore containing vanadium (6 per cent.), lead (30 per cent.), copper (9 per cent.), and arsenic (0.3 per cent.), which was extracted with sulphuric acid. This work had been going on for three years without mishap when, for some unexplained cause, the dangerous gas was generated and all but two of the thirteen men were affected, and one died. No special odor was noticed in the room.

Of the five classes of hemolytic poisons, this is the only one likely to be encountered in the industries, and in the mild cases the symptoms suggest gastro-intestinal catarrh or catarrhal jaundice until the clear, dark red urine with quantities of albumin is noted. The hematuria does not appear until after eight hours, the jaundice not till the second day, and the aspect may be more of a bronzing on account of the cyanosis. There is no production of methemoglobin, in contrast to intoxication with the nitro bodies. The blood shows destruction of from 75 to 80 per cent. of the erythrocytes by the end of a week, and the hemoglobin drops to 16 or 20 per cent. Oxygen has to be supplied to tide the patient along, and may have to be used for days and even weeks. Given under pressure, this saturates the remaining hemoglobin, and even the serum may absorb up to 2 per cent. To keep up the secretion of urine, fluids should be supplied in abundance by the rectum, with eventually venesection and infusion of Ringer's fluid or physiologic saline. In prophylaxis, ores as free from arsenic as possible should be used. Some have sug-

gested keeping birds in the room, and a hydrarsenioscope has been devised which reveals the presence of the gas in the air by the yellow tint assumed by mercuric chlorid.

Zentralblatt für Gynäkologie, Leipzig

May 8, 1920, 44, No. 19

Ovulation and the Hormone Doctrine. R. Meyer.—p. 473.
*Obstetric Compression of the Aorta. H. H. Schmid.—p. 479.
*Spontaneous Amputation of Left Adnexa. B. Schweitzer.—p. 487.
Two Cases of Adenomyositis Uteri et Recti. H. Becker.—p. 490.

Manual Compression of the Aorta in Third Stage of Labor.—Schmid states that serious hemorrhages during the third stage of labor or postpartum, of whatsoever origin, may be checked by the Momburg rubber tube or the Sehrt clamp, but that in the absence of these devices manual compression of the aorta should be resorted to, which is a well known though somewhat neglected procedure. Not only obstetricians but midwives also should familiarize themselves with this and use it when occasion demands. The use of the Momburg rubber tube is associated with some danger as is shown by a number of injuries and a few deaths. It is allowable only when the patient is in danger of bleeding to death.

Unilateral Spontaneous Amputation of Adnexa.—Schweitzer reports a case in which laparotomy revealed that spontaneous amputation of the left adnexa had occurred, and the separated organs were receiving their blood supply through secondary adhesions. On account of retraction of the omentum and stretching of the adhesions, the adnexa had migrated to the middle of the abdominal cavity and had no connection with their original site.

May 15, 1920, 44, No. 20

The Sigwart Sign of Virulence of Streptococci. H. Neu.—p. 508.
Pendulous Abdomen and Cesarean Section. T. Micholitsch.—p. 514.
*Supravaginal Hysterectomy for Genital Prolapse. K. Tittel.—p. 517.
*Spasm of the Nipple. R. Zimmermann.—p. 520.
Rarity of Eclampsia on War Diet. B. Váró.—p. 522.

Supravaginal Hysterectomy for Prolapse of Uterus.—Tittel's operation that he has used in seventeen cases has given entirely satisfactory results, namely, the von Holst supravaginal amputation of the uterus, suturing the stump to the abdominal wall. He recommends this operation especially for total prolapse in elderly women.

Spasm of the Nipple.—Zimmermann describes a peculiar condition of the nipple in an otherwise healthy primipara. When the child was 7 weeks old, he observed that a few minutes after it had nursed, the nipple began to turn white. At first a white spot the size of a pinhead could be seen in the center; it gradually spread over the whole nipple and resembled a Braun wheal induced on the skin. The nipple felt hard. At first the pain was confined to the nipple but later radiated to the whole mamma. The phenomenon lasted from five to eight minutes and receded slowly. A similar condition had been noted at times during pregnancy. Therapeutic attempts proved unsuccessful.

Arbeiten a. d. Anat. Institut. d. Univ. Sendai, Japan

May 15, 1920, No. 4

Microscopic Anatomy of the Truncus Cerebri in Mammals. G. Fuse.—pp. 1 to 107; 93 plates.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

May 8, 1920, 1, No. 19

*Deviation of Complement in Tuberculosis. J. Hekman.—p. 1612.
One-Sided Diet and the Vitamins. D. J. Hulshoff Pol.—p. 1625.
*The Sachs-Georgi Reaction K. Dekenga and Plantenga.—p. 1631.
Pathology of First Months of Life. Cornelia de Lange.—p. 1633.
Case of Hypernephroma of Kidney. L. J. van der Mandele.—p. 1638.

Deviation of Complement in Tuberculosis.—Hekman found that all the human serums he examined laked sheep erythrocytes, but that this laking property could be checked with tuberculous serum when an antigen, such as a 1 per cent. solution of tuberculin, was added to the serum. He adds a little casein to absorb some of the hemolysins and reduce the tryptic power of the serum by diverting it away from the tuberculin. It also serves to avert the nonspecific binding of the complement by the tuberculin. The test gives a positive response in all cases of established tuberculosis, regardless of its location, the central nervous system excepted. The prognosis depends on circumstances; an intense response, showing large amounts of antibodies, is a favorable sign, but the extent of the lesions may be beyond recuperation. From his observations in the course of this research and the experiences related by veterinarians, and his theoretical reasoning, he has become quite skeptical in regard to possible benefit from vaccine treatment of tuberculosis.

The Sachs-Georgi Reaction in Syphilis.—Dekenga and Plantenga report here the parallel findings with the Wassermann and Sachs-Georgi tests as applied to their last 1,000 serums examined. The last mentioned test becomes negative under treatment sooner than the former, and the findings with the two tests were occasionally conflicting in different senses. Hence the latter cannot be relied on alone, but in combination with the Wassermann test it may prove instructive.

May 15, 1920, 1, No. 20

*Children Predisposed to Disease. C. J. van der Loo.—p. 1689.
Slight Virulence of Strain of Tubercle Bacilli. L. K. Wolff.—p. 1701.
Secondary Suture in Surgery of Trauma. H. Rath.—p. 1707.
Hallux Valgus. H. J. Lyeklama à Nijeholt.—p. 1711.
*Epinephrin Arrests Abdominal Pains. A. G. W. van Waveren.—p. 1716.

Physical Standards of Children.—Van der Loo measures the side-to-side diameter of the chest as the child stands with arms stretched horizontally at the sides, and the diameter through sternum and spine as the arms are extended forward. The average difference between these two diameters gives the most instructive chest measure, compared with the circumference of the chest, the vital capacity, the weight, and the height. The records from 330 children are compared, confirming that by such measurements it is possible to sift out the children who are peculiarly predisposed to tuberculosis and start them on the right track in time.

Epinephrin in Treatment of Abdominal Pain.—Van Waveren describes as a typical instance of the benefit occasionally to be derived from epinephrin, the case of a woman whose abdominal pains persisted unmodified after appendicectomy. He ordered 50 mg. of dry suprarenal substance daily, but this dose had to be reduced to 25 mg. Under this the abdominal pains subsided and the stools became regular. Then the dose was continued for two weeks on alternate days, and clinically normal conditions were restored for a time. Then the complaints began anew, and again the symptoms yielded to the epinephrin, as also at a third recurrence. Three months have elapsed since the last recurrence, and the abdominal conditions have been apparently normal since. The patient is undoubtedly neuropathic; and epinephrin probably stimulates the ganglion cells to better functioning.

Hospitalstidende, Copenhagen

May 26, 1920, 63, No. 21

*Absorption of Visible and Ultra-Red Rays by the Skin. C. Sonne.—p. 321. Cone'd in No. 23, p. 353.

June 2, 1920, 63, No. 22

Papillomatous Tumors in the Thyroid; Two Cases. A. Sennels.—p. 337.

Absorption of Visible and Ultra-Red Rays by the Skin.—This communication from the Finsen Light Institute seeks to explain the action of the general arc light baths by comparing effects of the light rays and of infra-red rays on the skin of the forearm. Sonne announces as the result of his extensive research that the arm can bear without burning 3.11 calories per minute of the visible rays and only 1.79 per minute of the "inner ultra-red" rays and 1.33 per minute of the "outer ultra-red" rays. None of the latter are reflected back from the surface while 35 per cent. of the visible and of the "inner ultra-red" rays are turned back, leaving only 2.02 calories to be absorbed. Hence this figure represents the amount of the visible rays that can be absorbed without burning. The temperature at the surface of the skin may therefore be 43.8 C. under exposure to the visible rays but 45.5 C. under the "outer infra-red" rays. With the latter, the temperature decreases down to body temperature at a depth of 1 cm., while with the visible rays the temperature increases with the depth to a certain point—about 0.5 cm.—

where the temperature reaches 47.6 C. (117 F.). At this point, the temperature with the infra-red rays is only 41.7 C. In short, he declares in conclusion, with exposure of the skin to the light rays we are able to raise the temperature of the blood in and under the skin higher than can be realized with the strongest bearable dark heat rays. The difference may amount to as much as 5.8 degrees centigrade.

Hygiea, Stockholm

June 16, 1920, 82, No. 11

Typhoid Epidemic at Sundbyberg, 1919. O. Karlén.—p. 353.
*Stability in Suspension of the Blood Corpuscles. K. G. Ploman.—p. 363.

Stability in Suspension of the Blood Corpuscles.—Ploman examines the blood circulation in the retina during pressure on the eyeball, and records the length of the interval between the arrest of the arterial circulation in this way and the appearance of a tendency to agglutination. The findings parallel those obtained in vitro by Fahræus' method, as he describes. In the eighty-three persons examined, wide individual variations were found.

Norsk Magazin for Lægevidenskaben, Christiania

July, 1920, 81, No. 7

*Serum Sickness and Anaphylaxis. Y. Ustvedt.—p. 625.
*Is Tuberculous Meningitis Curable? F. Harbitz.—p. 644.
*Treatment of Acute Empyema. E. Platou.—p. 666.

Is Serum Sickness Anaphylaxis?—Ustvedt presents arguments to the effect that serum sickness and anaphylactic shock are two different reactions.

Is Tuberculous Meningitis Possibly Curable?—Harbitz cites evidence from the literature that tuberculous meningitis can pass into a phase of fibrous transformation which results in the complete cure of the active disease. Rössle has reported a case of chronic tuberculous meningitis in a woman of 37 with final fatal coma after seventeen months, and Harbitz here describes a similar chronic case with a five and possibly eight months course in a man of 38 with necropsy findings showing mild tuberculous meningitis just entering a phase of anatomic healing. Another feature of the case was the spreading of the infectious process along the blood vessels into the brain and spinal cord, thus presenting the picture of diffuse tuberculous encephalitis and myelitis. In 60 per cent. of cases of tuberculous meningitis, the patients are infants, and in them it is invariably fatal. The instances of a chronic course and recovery are nearly all in adults, the resisting powers or increased immunity aiding in the struggle against the infection. Epidemic cerebrospinal meningitis often entails hydrocephalus and changes in the brain, with mental disturbance. But tuberculous meningitis seems to escape this tendency. If the patient recovers he is not left with defects. Lumbar puncture and tuberculin treatment may contribute to the favorable outcome. In conclusion Harbitz cites a case from Overland's practice in which a girl of about 7 had long presented symptoms of tuberculous meningitis, but finally recovered and in time married and has borne two children.

Treatment of Empyema.—Platou reports a death rate of 17.1 per cent. in his 105 cases of acute empyema after influenza. He operated in ninety-nine cases, three of his patients dying without an operation and three recovering without one. The best results were realized with resection of ribs and valve drainage. This technic is simple and easy and should be applied in all cases in which the acute empyema is not frankly fetid. After the pus has been aspirated out, he explores with a finger to remove fibrin deposits, and then drains with a retention catheter and valve tube. The dressings do not have to be changed for eight or ten days.

Svenska Läkaresällskapets Handlingar, Stockholm

March 31, 1920, 46, No. 1

Influenza and the Nervous System. H. Marcus.—p. 1.
*Serotherapy of Complications of Gonorrhea. J. Reenstierna.—p. 39.

Serotherapy of Complications of Gonorrhea.—Reenstierna enhances the effect of the antigonococcus serum by adding some substance that will induce fever, hoping thus to render the gonococci more susceptible as they are unable to bear a high temperature. To induce this "antibody fever" he used killed cultures of bacteria, for example, those of typhoid. He has applied this combined serotherapy in 100 cases of different complications of gonorrhea, especially arthritis, epididymitis and prostatitis, and the outcome has been extremely satisfactory, he says, in the majority of cases. Some very grave cases of gonococcus arthritis subsided completely in a week or two after one or two injections. In a very few cases no benefit was apparent and he thinks that secondary infection was probably responsible for this. Prostatitis was generally cured in a week, and in one case a large gonorrheal abscess in the perineal region healed after a single injection. His antiserum is prepared by intravenous immunization of goats with cultures of living gonococci. Various reports on this polyvalent serum have been published in the last four years, his research at the state bacteriologic laboratory dating from 1914.

Ugeskrift for Læger, Copenhagen

June 10, 1920, 82, No. 24

*Acute Digestive Disturbances in Infants. C. E. Bloch.—p. 745.

Acute Digestive Disturbances in Young Infants.—Bloch lists four types: acute dyspepsia; the grave form, acute gastro-enteritis; acute gastro-enteritis in the course of chronic dyspepsia; and the cases in which the diarrhea and vomiting are not due to any independent pathologic condition of the digestive tract, but are merely a symptom of some pathologic condition in some other part of the body. The acute digestive disturbances represent merely the way in which the young infant reacts to any acute infection, regardless of its localization. Even overheating, without infection or intoxication, may induce these symptoms in the digestive tract. Czerny calls this fourth group "nutritional disturbances with parenteral infection," but Bloch thinks the term "symptomatic diarrhea" is more accurate, as not only the cause and course are different, but the treatment differs from that of actual nutritional disturbances. His mortality in the above four groups was zero in eighty-five cases of acute dyspepsia; 17 per cent. in the 310 cases of acute gastro-enteritis, and 26 per cent. in the seventy-seven cases of acute gastro-enteritis in chronic dyspepsia. The mortality specified does not include the 4 and 7 per cent. that died within twenty-four hours of being admitted to the hospital. The grave form of acute gastro-enteritis is of infectious origin, mostly due to colon bacilli which are not pathogenic for older children, but in 10 per cent. of 217 cases, paradysentery, typhoid or paratyphoid bacilli were isolated. The clinical picture was very much alike in all these. The main point in treatment is to supply water, especially by the mouth, but also saline subcutaneously. Weak tea instead of plain water may aid in stimulation. This restriction to water acts in acute gastro-enteritis regardless of its causal factors, but it should not be kept up for more than one, two or three days at most, as inanition promotes acidosis. He warns that sugar and carbohydrates are liable to bring back the symptoms, and gruels are the worst food that can be given at these times. He feeds one part milk to two parts water, boiled for two minutes in the Soxhlet apparatus. The effects have surpassed those of albumin milk, etc., in his experience. He continues this milk-water diet for not longer than a week at most, and emphasizes the importance of stimulants, stating that he makes extensive use of camphorated oil injections, digitalis preparations and caffein, as indicated. Infants bear these stimulants well and they have often an unmistakably favorable action on the small pulse, subnormal temperature and other symptoms of impending collapse.

July 1, 1920, 82, No. 27

The Metabolism and Internal Secretions. N. R. Christoffersen.—p. 838. Conc'n in No. 28, p. 879.
*Salivation and Hyperacidity. V. Andresen.—p. 850.

Salivation and Hyperacidity.—Andresen suggests that possibly excessive acidity of the stomach might be reduced by reflex action from rinsing the mouth with an acid solution. This induces increased production of saliva, and at the same time the saliva alkalescence is more than doubled in five minutes.